An equation of the plane through the point $(-2, 2, 1)$ and parallel to the plane $5x + z = 4 + 2y$, is

(A) $5(x - 2) - 2(y + 2) + (z + 1) = 0$

(B) $5(x + 2) + (y - 2) - 2(z - 1) = 0$

POWERUNIT

(C) $5(x - 2) + 2(y + 2) + (z + 1) = 0$

(D) $5(x + 2) - 2(y - 2) + (z - 1) = 0$

(E) $5(x + 2) - 2(y - 2) - (z - 1) = 0$

الممسوحة ضوئيا بـ CamScanner

If the direction cosines of the vector $\vec{v}$ satisfy

$\cos\alpha = \frac{1}{4}$, $\cos\beta > 0$, $\cos\gamma = -\frac{\sqrt{2}}{2}$, then the vector $\vec{w}$ that has magnitude 4 and the opposite direction of $\vec{v}$ is

(A) $\langle 1, \sqrt{7}, -2\sqrt{2}\rangle$
(B) $\langle -1, -\sqrt{7}, 2\sqrt{2}\rangle$
(C) $\langle \frac{1}{4}, \frac{9}{4}, -2\rangle$
(D) $\langle -\frac{1}{4}, -\frac{7}{4}, -\frac{\sqrt{2}}{2}\rangle$
(E) $\langle -1, -3, 2\sqrt{2}\rangle$

POWERUNIT

CamScanner المسوحة ضوئيا بـ

Find the projection of $\overrightarrow{BC}$ onto $\overrightarrow{AC}$, $proj_{\overrightarrow{AC}}\,\overrightarrow{BC}$

where $A(1,2), B(4,6), C(5,5)$

(A) $\langle \frac{21}{25}, \frac{28}{25} \rangle$

(B) $\frac{1}{5}$

POWERUNIT

(C) $-\frac{4}{25}i - \frac{3}{25}j$

(D) $\langle \frac{4}{25}, \frac{3}{25} \rangle$

(E) $\langle \frac{1}{2}, -\frac{1}{2} \rangle$

الممسوحة ضوئيا بـ CamScanner

The distance between the line $L: x-2=\frac{y+2}{-1}=\frac{z+3}{-1}$ and the plane $2x+y+z=7$

(A) $\frac{8}{\sqrt{3}}$

(B) $\frac{8}{\sqrt{6}}$

POWERUNIT

(C) $\frac{4}{\sqrt{6}}$

(D) $\frac{4}{\sqrt{3}}$

(E) $\frac{7}{\sqrt{6}}$

المسوحة ضوئيا بـ CamScanner

If the volume of the parallelepiped, determined by the vectors $\vec{a}$, $\vec{b}$ and $\vec{c}$ is 8, then $|\vec{a}\cdot(\vec{b}\times -4\vec{c})|$ is

(A) 18

(B) 4

POWEROUNIT

(C) 32

(D) -32

(E) 2

الممسوحة ضوئيا بـ CamScanner

Parametric equations of the line passing through the point $(-2, -1, 3)$, and perpendicular to the two lines
L1: $x = 4 - t$, $y = 6$, $z = -1 + 2t$
L2: $x = s$, $y = 2 - s$, $z = 4$ are

(A) $x = -2 - 2t$, $y = -1 + 2t$, $z = 3 + t$

(B) $x = -2 + 2t$, $y = -1 - 2t$, $z = 3 + t$

(C) $x = -2 + 2t$, $y = -1 + 2t$, $z = 3 - t$

(D) $x = -2 + 2t$, $y = -1 + 2t$, $z = 3 + t$

(E) $x = -2 - 2t$, $y = -1 - 2t$, $z = 3 - t$

POWERUNIT

CamScanner الممسوحة ضوئيا بـ

The set of all points that lie between the yz −plane and the vertical plane $x = 4$ and outside (or on) the sphere with center $(0, -1, 0)$ and radius 5 can be represented by the inequalities

(A) $0 \leq x \leq 4$ and $x^2 + y^2 + z^2 + 2y > 24.$

(B) $0 < x < 4$ and $x^2 + y^2 + z^2 + 2y \geq 25.$

(C) $0 < x < 4$ and $x^2 + y^2 + z^2 - 2y \leq 24.$

(D) $yz < x < 4$ and $x^2 + y^2 + z^2 + 2y \leq 25.$

(E) $0 < x < 4$ and $x^2 + y^2 + z^2 + 2y \geq 24.$

POWERUNIT

CamScanner الممسوحة ضوئيا بـ

Parametric equations of the line passing through the point $(-2, -1, 3)$, and perpendicular to the two lines
L1: $x = 4 - t$, $y = 6$, $z = -1 + 2t$
L2: $x = s$, $y = 2 - s$, $z = 4$ are

(A) $x = -2 - 2t$, $y = -1 + 2t$, $z = 3 + t$

POWERUNIT

(B) $x = -2 + 2t$, $y = -1 - 2t$, $z = 3 + t$

(C) $x = -2 + 2t$, $y = -1 + 2t$, $z = 3 - t$

(D) $x = -2 + 2t$, $y = -1 + 2t$, $z = 3 + t$

(E) $x = -2 - 2t$, $y = -1 - 2t$, $z = 3 - t$

الممسوحة ضوئيا بـ CamScanner

$2x^2 + y^2 + 3z^2 - 2y = 4$, represents

(A) cone

(B) hyperboloid of one sheet

(C) hyperboloid of two sheets

(D) ellipsoid

(E) paraboloid

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

The equation of the sphere whose one of its diameter has endpoints $(1,-2,0)$ and $(3,4,-6)$.

(A) $(x-2)^2+(y-1)^2+(z+3)^2=76$

(B) $(x-2)^2+(y-1)^2+(z+3)^2=19$

(C) $(x-4)^2+(y-2)^2+(z+6)^2=19$

(D) $(x-2)^2+(y-1)^2+(z+3)^2=38$

(E) $(x-4)^2+(y-2)^2+(z+6)^2=38$

الممسوحة ضوئيا بـ CamScanner

The region in $\mathbb{R}^3$ defined by the following inequalities

$4 < x^2 + y^2 < 16$, $z > 1$ is

(A) All points that lie between (or on) the two circular cylinders $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and above (or on) the plane $z = 1$.

(B) All points that lie between (or on) the two circles $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and above (or on) the line $z = 1$.

POWERUNIT

(C) All points that lie between the two circular cylinders $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and above the plane $z = 1$.

(D) All points that lie between the two circular cylinders $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and below the plane $z = 1$.

(E) All points that lie between the two circles $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and above the line $z = 1$.

الممسوحة ضوئيا بـ CamScanner

Let P, Q and R be three points such that $\vec{PQ} = < 2, 3, -2 >$, $\vec{PR} = < 3, 2, 1 >$. If $\vec{u}$ is a vector in the same direction of the vector $\vec{QR}$ and has magnitude 3, then $\vec{u} =$

A) $\frac{3}{\sqrt{11}} < 3, -3, 9 >$
B) $\frac{1}{\sqrt{11}} < -3, -3, 9 >$
C) $\frac{1}{\sqrt{11}} < 3, -3, -9 >$
D) $\frac{1}{\sqrt{11}} < -3, 3, -9 >$
E) $\frac{1}{\sqrt{11}} < 3, -3, 9 >$

POWERUNIT

- A
- B
- C
- D
- E

المسوحة ضوئيا بـ CamScanner

If p is the point of intersection between the $xz-$plane and the line $x = 2 - 2t,\ y = 2 - t,\ z = 3 - t$. Then the equation of the line passes through p and parallel to the line $x = 1 - 2s,\ y = 4s,\ z = 1 + 3s$ is:

POWERUNIT

A) $x = -2 - 2t,\ y = 4 + 4t,\ z = 3t$
B) $x = 7 - 2t,\ y = 4t,\ z = 4 + 3t$
C) $x = -2t,\ y = 3 + 4t,\ z = 1 + 3t$
D) $x = -4 - 2t,\ y = -1 + 4t,\ z = 3t$
E) $x = -2 - 2t,\ y = 4t,\ z = 1 + 3t$

CamScanner الممسوحة ضوئيا بـ

If $\vec{v}$ and $\vec{w}$ are two nonzero vectors in space such that $(\vec{v} + 2\vec{w})$ and $(2\vec{w} - \vec{v})$ are orthogonal, then

(A) $\vec{v} = 2\vec{w}$ or $\vec{v} = -2\vec{w}$.

(B) $\vec{v}$ and $(\vec{v} + \vec{w})$ are orthogonal.

(C) $4|\vec{v}|^2 = |\vec{w}|^2$

(D) $|\vec{v}|^2 = 4|\vec{w}|^2$.

(E) $\vec{v}$ and $\vec{w}$ are orthogonal.

POWERUNIT

CamScanner الممسوحة ضوئيا بـ

The equation of the sphere whose one of its diameter has endpoints $(1, -2, 0)$ and $(3, 4, -6)$.

(A) $(x-2)^2 + (y-1)^2 + (z+3)^2 = 76$.

(B) $(x-2)^2 + (y-1)^2 + (z+3)^2 = 19$.

POWERUNIT

(C) $(x-4)^2 + (y-2)^2 + (z+6)^2 = 19$.

(D) $(x-2)^2 + (y-1)^2 + (z+3)^2 = 38$.

(E) $(x-4)^2 + (y-2)^2 + (z+6)^2 = 38$.

الممسوحة ضوئيا بـ CamScanner

The equation of the plane that contains the two lines
$L_1 : x = 1 + 2t,\ y = 1 - t,\ z = 2 + t,$ and
$L_2 : x = 1 - 2s,\ y = 1 + 3s,\ z = 2 + s$ is:

A) $-4x - 4y + 4z = 0$
B) $-2x - 4y + 8z = 10$
C) $2x + 4z = 10$
D) $-4x + 8z = 12$
E) $2x - 4y - 8z = -18$

POWEROUNIT

- A
- B
- C
- D
- E

CamScanner المسوحة ضوئيا بـ

The quadric surface $x^2 + 1 = 2x + y^2 + z^2$ is

(A) elliptic cone with axis the $x - axis$ and vertex $(1,0,0)$.

(B) hyperboloid of one sheet with axis the $x - axis$ and center $(1,0,0)$.

POWERUNIT

(C) hyperboloid of two sheets with axis the $x - axis$ and vertices $(1,0,0)$ and $(-1,0,0)$.

(D) ellipsoid with center $(1,0,0)$.

(E) elliptic paraboloid with axis the positive $x - axis$ and vertex $(1,0,0)$.

الممسوحة ضوئيا بـ CamScanner

If $\vec{a} = <2, 4, -3>$, $\vec{b} = <2, -1, 1>$, then $proj_{\vec{a}}\vec{b} =$

A) $\frac{1}{2} < 2, -1, 1 >$
B) $\frac{-3}{\sqrt{29}} < 2, 1, -1 >$
C) $\frac{-3}{29} < 2, -1, 1 >$
D) $\frac{-1}{2} < 2, 4, -3 >$
E) $\frac{-3}{29} < 2, 4, -3 >$

POWERUNIT

- A
- B
- C
- D
- E

CamScanner المسوحة ضوئيا بـ

If $P_1(0,0,1)$, $P_2(2,1,3)$, $P_3(3,0,2)$ and $P_4(4,2,1)$ are points in space, then one of the following is true

(A) P_1, P_2, P_3 and P_4 are coplanar.

(B) The **volume** of parallelepiped with adjacent edges P_1P_2, P_1P_3, and P_1P_4 equals 16.

(C) The **volume** of parallelepiped with adjacent edges P_1P_2, P_1P_3, and P_1P_4 equals 12.

POWCROUNIT

(D) The **volume** of parallelepiped with adjacent edges P_1P_2, P_1P_3, and P_1P_4 equals 3.

(E) The **volume** of parallelepiped with adjacent edges P_1P_2, P_1P_3, and P_1P_4 equals 4.

الممسوحة ضوئيا بـ CamScanner

The distance between the line: $\frac{x}{2} = \frac{y-1}{3} = \frac{z+1}{4}$, and the plane $3(x+1) + 2(y-2) - 3(z-1) = 0$ equal:

A) $\frac{3}{\sqrt{22}}$
B) $\frac{5}{\sqrt{22}}$
C) $\frac{6}{\sqrt{22}}$
D) $\frac{7}{\sqrt{22}}$
E) $\frac{7}{\sqrt{2}}$

POWERUNIT

○ A

○ B

○ C

○ D

○ E

المسوحة ضوئيا بـ CamScanner

The integral that represents the volume of the solid enclosed by the coordinate planes and the plane $2x+4y+2z=8$ is:

A) $\int_0^4 \int_0^2 \int_0^{4-x-2y} dzdydx$

B) $\int_0^4 \int_0^{2-\frac{x}{2}} \int_0^{4-x-2y} dzdydx$

C) $\int_0^4 \int_0^{2-\frac{x}{2}} \int_0^{4-x-2y} (4-x-2y)dzdydx$

D) $\int_0^4 \int_0^2 \int_0^4 dzdydx$

E) $\int_0^4 \int_0^2 \int_0^4 (4-x-2y)dzdydx$

POWERUNIT

○ A)

◉ B)

○ C)

○ D)

○ E)

Clear my choice

الممسوحة ضوئيا بـ CamScanner

If we convert the integral $\int_0^{\sqrt{3}} \int_{\frac{y}{\sqrt{3}}}^{\sqrt{4-y^2}} e^{x^2+y^2}\, dxdy$, to polar co-ordinate then the result integral will be:

A) $\int_{\frac{\pi}{3}}^{\frac{\pi}{2}} \int_0^2 re^{r^2}\, drd\theta$

B) $\int_0^{\frac{\pi}{3}} \int_0^2 re^{r^2}\, drd\theta$

C) $\int_0^{\frac{\pi}{6}} \int_0^2 re^{r^2}\, drd\theta$

D) $\int_{\frac{\pi}{6}}^{\frac{\pi}{2}} \int_0^2 re^{r^2}\, drd\theta$

POWERUNIT

E) $\int_0^{\frac{\pi}{3}} \int_0^2 e^{r^2}\, drd\theta$

- A)
- B)
- C)
- D)
- E)

Clear my choice

المسوحة ضوئيا بـ CamScanner

Question 10

Not yet answered

Marked out of 4.00

Flag question

Let $z + 3e^{xy} + 4yz^2 + \tan y = 10$. Then $\frac{\partial z}{\partial y} =$

(A) $-\frac{1+8yz}{3xe^{xy}+4z^2+\sec^2 y}$

(B) $-\frac{3xe^{xy}+4z^2+\sec^2 y}{3ye^{xy}}$

(C) $-\frac{3xe^{xy}+4z^2+\sec^2 y}{8yz}$

(D) $\frac{3ye^{xy}}{3xe^{xy}+4z^2+\sec^2 y}$

(E) $-\frac{3xe^{xy}+4z^2+\sec^2 y}{1+8yz}$

- A)
- B)
- C)
- D)
- E)

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

Question 13

Not yet answered

Marked out of 4.00

Flag question

Let $f(x,y,z) = y^2x^4z^4$. Then

(A) the maximum directional derivative of f at the point (1,1,1) is 6 and it occurs in the direction of $\langle\frac{2}{3},\frac{1}{3},\frac{2}{3}\rangle$.

(B) the minimum directional derivative of f at the point (1,1,1) is 6 and it occurs in the direction of $\langle-\frac{2}{3},-\frac{1}{3},-\frac{2}{3}\rangle$.

(C) the maximum directional derivative of f at the point (1,1,1) is 6 and it occurs in the direction of $\langle\frac{1}{3},\frac{2}{3},\frac{2}{3}\rangle$.

POWERUNIT

(D) the maximum directional derivative of f at the point (1,1,1) is $\sqrt{3}$ and it occurs in the direction of $\langle\frac{1}{\sqrt{3}},\frac{1}{\sqrt{3}},\frac{1}{\sqrt{3}}\rangle$.

(E) the minimum directional derivative of f at the point (1,1,1) is $-\sqrt{3}$ and it occurs in the direction of $\langle-\frac{1}{\sqrt{3}},-\frac{1}{\sqrt{3}},-\frac{1}{\sqrt{3}}\rangle$.

- ○ A)
- ○ B)
- ○ C)
- ◉ D)

الممسوحة ضوئيا بـ CamScanner

If E is the region below xy–plane and above the cone $z = -\sqrt{x^2 + y^2}$ and between the two spheres $x^2 + y^2 + z^2 = 4$ and $x^2 + y^2 + z^2 = 9$. Then the integral $\int\int_E\int \sqrt{x^2 + y^2 + z^2}\, dV$ in spherical coordinate equal to:

A) $\int_{\frac{\pi}{4}}^{\frac{\pi}{2}} \int_0^{2\pi} \int_2^3 \rho^3 sin\phi \, d\rho d\theta d\phi$

B) $\int_{\frac{\pi}{2}}^{\frac{3\pi}{4}} \int_0^{2\pi} \int_2^3 \rho^3 sin\phi \, d\rho d\theta d\phi$

C) $\int_{\frac{\pi}{2}}^{\frac{3\pi}{4}} \int_0^{2\pi} \int_2^3 \rho \, d\rho d\theta d\phi$

D) $\int_{\frac{\pi}{4}}^{\pi} \int_0^{\pi} \int_2^3 \rho^3 sin\phi \, d\rho d\theta d\phi$

POWERUNIT

E) $\int_{\frac{\pi}{4}}^{\pi} \int_0^{2\pi} \int_2^3 \rho \, d\rho d\theta d\phi$

- ○ A)
- ○ B)
- ○ C)
- ◉ D)
- ○ E)

Clear my choice

CamScanner المسوحة ضوئيا بـ

If $|(2\vec{a}+\vec{b}) \times (\vec{a}-\vec{b})| = 24$, then the area of the parallelogram determined by $\vec{a}$ and $\vec{b}$ is

- A. 12
- B. 4
- C. 3
- D. 8
- E. 6

Clear my choice

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

The helix $\vec{r}(t) =< sin\ t,\ cos\ t,\ t >$ intesects the ellipsoid $x^2 + y^2 + 2z^2 = 19$ at $t =$

- A. ± 3
- B. ± 2
- C. ± 1
- D. There is no intersection
- E. ± 4

Clear my choice

POWERUNIT

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Question **6**

Not yet answered

Marked out of 3.00

Flag question

If we change the integral $\int_{-2}^{0}\int_{0}^{\sqrt{4-x^2}}\int_{x^2+y^2}^{8-x^2-y^2} x\,dzdydx$ to cylindrical coordinate, then the result integral will be:

.

A) $\int_{\frac{\pi}{2}}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2\cos\theta\,dzdrd\theta$

B) $\int_{\frac{\pi}{2}}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r\cos\theta\,dzdrd\theta$

C) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2\cos\theta\,dzdrd\theta$

D) $\int_{0}^{2\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2\cos\theta\,dzdrd\theta$

E) $\int_{\frac{\pi}{2}}^{\pi}\int_{0}^{4}\int_{r^2}^{8-r^2} r^2\cos\theta\,dzdrd\theta$

- A)
- B)
- C)
- D) (selected)
- E)

Clear my choice

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

If we change the order of the integral $\int_0^8 \int_0^{x^{\frac{1}{3}}} f(x,y)\ dydx$, then the result integral will be:

A) $\int_0^2 \int_0^{y^3} f(x,y)\ dxdy$

B) $\int_0^2 \int_{y^3}^2 f(x,y)\ dxdy$

C) $\int_0^2 \int_{y^3}^8 f(x,y)\ dxdy$

D) $\int_{x^{\frac{1}{3}}}^3 \int_0^8 f(x,y)\ dxdy$

E) $\int_0^{\sqrt{8}} \int_{y^3}^2 f(x,y)\ dxdy$

POWERUNIT

○ A)

○ B)

◉ C)

○ D)

○ E)

Clear my choice

الممسوحة ضوئيا بـ CamScanner

Minimize $f(x,y,z) = (x-4)^2 + (y-2)^2 + z^2$ subject to the constraint $x^2 + y^2 - z^2 = 0$ to get

(A) $(2,1,\sqrt{5})$ and $(2,1,-\sqrt{5})$ are the points on the cone $z^2 = x^2 + y^2$ that are closest to the point $(4,2,0)$.

(B) $(2,1,\sqrt{5})$ and $(2,1,-\sqrt{5})$ are the points on the surface $z^2 = (x-4)^2 + (y-2)^2$ that are closest to the cone $z^2 = x^2 + y^2$.

(C) The smallest value of the function $f(x,y,z) = (x-4)^2 + (y-2)^2 + z^2$ that satisfies $x^2 + y^2 = z^2$ occurs only at the point $(2,1,-\sqrt{5})$.

POWERUNIT

(D) $(1,1,\sqrt{2})$ and $(1,1,-\sqrt{2})$ are the points on the cone $z^2 = x^2 + y^2$ that are closest to the point $(4, 2, 0)$.

(E) $(4,2,0)$ is the points on the surface $z^2 = (x-4)^2 + (y-2)^2$ that is closest to the cone $z^2 = x^2 + y^2$.

- ○ A)
- ○ B)
- ○ C)
- ○ D)
- ◉ E)

الممسوحة ضوئيا بـ CamScanner

Question 3

Not yet answered

Marked out of 4.00

Flag question

Let $f(x,y)=\frac{y^2e^x}{y^2+3x^2}$. Then $\lim_{(x,y)\to(0,0)} f(x,y)$

(A) exists and equals 0 since $f(x,y)$ approaches (0,0) along any path of the form $x=my^2$ the limit is 0.

(B) exists and equals 1 by using Squeeze Theorem since $0\le\frac{y^2e^x}{y^2+3x^2}\le e^x$, and $\lim_{(x,y)\to(0,0)} e^x=1$.

(C) does not exist since $\frac{0}{0}$ is an indeterminate form.

POWERUNIT

(D) does not exist since if (x,y) approaches (0,0) along the line $y=x$ the limit is $\frac{1}{4}$ and if (x,y) approaches (0,0) along the line $y=3x$ the limit is $\frac{3}{4}$.

(E) does not exist since if (x,y) approaches (0,0) along the line $y=3$ the limit is 1 and if (x,y) approaches (0,0) along the line $x=3$ the limit is 0.

- A)
- B)
- C)
- D)

الممسوحة ضوئيا بـ CamScanner

If $(\sqrt{3}, -\sqrt{3}, -\sqrt{6})$ is the rectangular coordinate of the point p, then the spherical coordinate of p is:

A) $(2\sqrt{3}, \frac{\pi}{4}, \frac{\pi}{4})$

B) $(2\sqrt{3}, \frac{7\pi}{4}, \frac{\pi}{4})$

C) $(2\sqrt{3}, \frac{3\pi}{4}, \frac{3\pi}{4})$

D) $(2\sqrt{3}, \frac{3\pi}{4}, \frac{\pi}{4})$

E) $(2\sqrt{3}, \frac{7\pi}{4}, \frac{3\pi}{4})$

POWERUNIT

- ○ A)
- ○ B)
- ◉ C)
- ○ D)
- ○ E)

Clear my choice

CamScanner الممسوحة ضوئيا بـ

Question 4

Not yet answered

Marked out of 3.00

Flag question

The angle between the two planes $x + 2y + z = 1$ and $x - 2y - z = 2$ is

- A. $cos^{-1}(\frac{4}{6})$
- B. $cos^{-1}(\frac{-4}{6})$
- C. $cos^{-1}(1)$
- D. $cos^{-1}(\frac{5}{6})$
- E. $cos^{-1}(-1)$

POWEROUNIT

Clear my choice

Previous activity

Jump to...

المسوحة ضوئيا بـ CamScanner

If the area of the parallelogram determined by $\vec{a}$ and $\vec{b}$ is equal to 6 , then $\|(2\vec{a}+\vec{b})\times(\vec{a}-\vec{b})\|$

(A) -18

(B) 6

(C) $\vec{0}$

(D) -6

(E) 18

POWERUNIT

(A) ●

(B) ○

(C) ○

(D) ○

(E) ○

الممسوحة ضوئيا بـ CamScanner

The curvature of the helix $\vec{r}(t) = < 2\cos t, 2\sin t, 2t >$ is

- A. $\frac{1}{8}$
- B. $\frac{1}{12}$
- C. $\frac{1}{10}$
- D. $\frac{1}{6}$
- E. $\frac{1}{4}$

POWERUNIT

Clear my choice

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Jump to...

الممسوحة ضوئيا بـ CamScanner

If $f(x,y)$ has a continuous second partial derivatives and

$f_x = (2x - x^2 - 5y^2)e^{-x}$ and $f_y = 10ye^{-x}$, then

(A) $f(0,0)$ is a local minimum and $(2,0)$ is a saddle point.

(B) $(0,0)$ is a saddle point and $f(2,0)$ is a local maximum.

(C) $f(0,0)$ is a local maximum and $f(2,0)$ is a local minimum.

(D) $f(0,0)$ is a local minimum, $f(-2,0)$ is a local minimum and

$(2,0)$ is a saddle point.

(E) $f(0,0)$ is a local maximum. $f(0,2)$ and $f(2,0)$ are local minimum.

POWERUNIT

- A)
- B)
- C)
- D)

المسوحة ضوئيا بـ CamScanner

Question **2**

Not yet answered

Marked out of 4.00

Flag question

Let $f(x,y,z) = x^2y^4z^4$. Then

(A) the maximum directional derivative of f at the point $(1,1,1)$ is 6

and it occurs in the direction of $\langle \frac{2}{3}, \frac{1}{3}, \frac{2}{3} \rangle$.

(B) the maximum directional derivative of f at the point $(1,1,1)$ is 6

and it occurs in the direction of $\langle \frac{1}{3}, \frac{2}{3}, \frac{2}{3} \rangle$.

(C) the minimum directional derivative of f at the point $(1,1,1)$ is 6

and it occurs in the direction of $\langle -\frac{1}{3}, -\frac{2}{3}, -\frac{2}{3} \rangle$.

(D) the maximum directional derivative of f at the point $(1,1,1)$ is $\sqrt{3}$

and it occurs in the direction of $\langle \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}} \rangle$.

(E) the minimum directional derivative of f at the point $(1,1,1)$ is $-\sqrt{3}$

and it occurs in the direction of $\langle -\frac{1}{\sqrt{3}}, -\frac{1}{\sqrt{3}}, -\frac{1}{\sqrt{3}} \rangle$.

A)

POWERUNIT

CamScanner المسوحة ضوئيا بـ

The integral that represents the volume of the solid enclosed by the coordinate planes and the plane $x + 2y + z = 2$ is:

A) $\int_0^2 \int_0^1 \int_0^{2-x-2y} dzdydx$

B) $\int_0^2 \int_0^{1-\frac{x}{2}} \int_0^{2-x-2y} (2-x-2y)dzdydx$

C) $\int_0^2 \int_0^{1-\frac{x}{2}} \int_0^{2-x-2y} dzdydx$

D) $\int_0^2 \int_0^1 \int_0^2 dzdydx$

E) $\int_0^2 \int_0^1 \int_0^2 (2-x-2y)dzdydx$

○ A)

○ B)

POWERUNIT

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The distance between the line: $\frac{x}{2} = \frac{y-1}{3} = \frac{z+1}{4}$, and the plane $3(x-1)+2(y+1)-3(z+2)=0$ equal:

POWERUNIT

A) $\frac{2}{\sqrt{22}}$

B) $\frac{5}{\sqrt{22}}$

C) $\frac{12}{\sqrt{22}}$

D) $\frac{4}{\sqrt{22}}$

E) $\frac{2}{\sqrt{2}}$

CamScanner الممسوحة ضوئيا بـ

A 20-V emf placed across a series combination of two resistors causes a current of 2.0 A in each of the resistors .IF the same emf is placed across a parallel combination of the same two resistors and a current of 10 A through the emf is observed , what is the higher of the two resistance ? *

3 points

- 7.2 Ω
- 7.6 Ω
- 8.9 Ω
- 6.9 Ω

POWERUNIT

How many time-constants must elapse if an initially charged capacitor is to discharge 55% of its stored energy through a resistor? *

3 points

- 0.60
- 0,46
- 0.40

CamScanner المسوحة ضوئيا بـ

If $(-\sqrt{3}, \sqrt{3}, \sqrt{6})$ is the rectangular coordinate of the point p, then the spherical coordinate of p is:

A) $(2\sqrt{3}, \frac{\pi}{4}, \frac{\pi}{4})$

B) $(2\sqrt{3}, \frac{7\pi}{4}, \frac{\pi}{4})$

C) $(2\sqrt{3}, \frac{3\pi}{4}, \frac{3\pi}{4})$

D) $(2\sqrt{3}, \frac{3\pi}{4}, \frac{\pi}{4})$

POWERUNIT

E) $(2\sqrt{3}, \frac{7\pi}{4}, \frac{3\pi}{4})$

- A)
- B)
- C)
- D)
- E)

Clear my choice

المسوحة ضوئيا بـ CamScanner

The helix $\vec{r}(t) = \langle \sin t, \cos t, t \rangle$ intesects the ellipsoid $x^2 + y^2 + 2z^2 = 19$ at $t =$

- A. ± 1
- B. ± 4
- C. ± 3
- D. There is no intersection
- E. ± 2

Clear my choice

POWERUNIT

CamScanner الممسوحة ضوئيا بـ

If $f(x,y)$ has a continuous second partial derivatives and

$f_x = (-2x + x^2 + 5y^2)e^{-x}$ and $f_y = -10ye^{-x}$, then

(A) $f(0,0)$ is a local minimum and $(2,0)$ is a saddle point.

(B) $(0,0)$ is a saddle point and $f(2,0)$ is a local maximum.

POWERUNIT

(C) $f(0,0)$ is a local maximum and $(2,0)$ is a saddle point.

(D) $f(0,0)$ is a local minimum, $f(-2,0)$ is a local minimum and

$(2,0)$ is a saddle point.

(E) $f(0,0)$ is a local maximum, $f(0,2)$ and $f(2,0)$ are local minimum.

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If E is the region above the cone $z = -\sqrt{x^2 + y^2}$ and between the two spheres $x^2 + y^2 + z^2 = 4$ and $x^2 + y^2 + z^2 = 9$. Then the integral $\int\int_E\int \sqrt{x^2 + y^2 + z^2}\, dV$ in spherical coordinate equal to:

A) $\int_{\frac{\pi}{4}}^{\pi} \int_0^{2\pi} \int_2^3 \rho^3 sin\phi \; d\rho d\theta d\phi$

B) $\int_0^{\frac{\pi}{4}} \int_0^{2\pi} \int_2^3 \rho^3 sin\phi \; d\rho d\theta d\phi$

C) $\int_0^{\frac{3\pi}{4}} \int_0^{2\pi} \int_2^3 \rho \; d\rho d\theta d\phi$

D) $\int_0^{\frac{3\pi}{4}} \int_0^{2\pi} \int_2^3 \rho^3 sin\phi \; d\rho d\theta d\phi$

E) $\int_{\frac{\pi}{4}}^{\pi} \int_0^{2\pi} \int_2^3 \rho \; d\rho d\theta d\phi$

POWERUNIT

○ A)

○ B)

CamScanner الممسوحة ضوئيا بـ

Minimize $f(x,y,z) = (x-4)^2 + (y-2)^2 + z^2$ subject to the constraint

$x^2 + y^2 - z^2 = 0$ to get

(A) $(2,1,\sqrt{5})$ and $(2,1,-\sqrt{5})$ are the points on the cone $z^2 = x^2 + y^2$ that are closest to

the point $(4,2,0)$.

(B) $(2,1,\sqrt{5})$ and $(2,1,-\sqrt{5})$ are the points on the surface

$z^2 = (x-4)^2 + (y-2)^2$ that are closest to the cone $z^2 = x^2 + y^2$

POWERUNIT

(C) The smallest value of the function $f(x,y,z) = (x-4)^2 + (y-2)^2 + z^2$

that satisfies $x^2 + y^2 = z^2$ occurs only at the point $(2,1,-\sqrt{5})$.

(D) $(1,1,\sqrt{2})$ and $(1,1,-\sqrt{2})$ are the points on the cone $z^2 = x^2 + y^2$ that are closest to

the point $(4,2,0)$

(E) $(4,2,0)$ is the points on the surface $z^2 = (x-4)^2 + (y-2)^2$ that is closest to the cone $z^2 = x^2 + y^2$

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If E is the region below the cone $z = \sqrt{x^2 + y^2}$ and above the cone $z = -\sqrt{x^2 + y^2}$ and between the two spheres $x^2+y^2+z^2 = 4$ and $x^2 + y^2 + z^2 = 9$. Then the integral $\iiint_E \sqrt{x^2 + y^2 + z^2}\, dV$ in spherical coordinate equal to:

POWERUNIT

A) $\int_{\frac{\pi}{4}}^{\pi} \int_0^{2\pi} \int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

B) $\int_0^{\frac{\pi}{4}} \int_0^{2\pi} \int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

C) $\int_{\frac{\pi}{4}}^{\frac{3\pi}{4}} \int_0^{2\pi} \int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

D) $\int_{\frac{\pi}{4}}^{\frac{3\pi}{4}} \int_0^{\pi} \int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

E) $\int_{\frac{\pi}{4}}^{\pi} \int_0^{2\pi} \int_2^3 \rho \, d\rho d\theta d\phi$

CamScanner المسوحة ضوئيا بـ

The angle between the two planes $x + 2y + z = 1$ and $x + 3y - z = 2$ is

- A. $\cos^{-1}\left(\frac{4}{\sqrt{66}}\right)$
- B. $\cos^{-1}\left(\frac{-4}{\sqrt{66}}\right)$
- C. $\cos^{-1}\left(\frac{-6}{\sqrt{66}}\right)$
- D. $\cos^{-1}\left(\frac{6}{\sqrt{66}}\right)$
- E. $\cos^{-1}\left(\frac{5}{\sqrt{66}}\right)$

Clear my choice

POWERUNIT

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The angle between the two planes $x + 2y + z = 1$ and $x + y + 2z = 2$ is

- A. $cos^{-1}(\frac{4}{6})$
- B. $cos^{-1}(1)$
- C. $cos^{-1}(-1)$
- D. $cos^{-1}(\frac{-4}{6})$
- E. $cos^{-1}(\frac{5}{6})$

POWERUNIT

Next page

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If we convert the integral $\int_0^2 \int_{\sqrt{3}y}^{\sqrt{16-y^2}} e^{x^2+y^2}\, dx dy$, to polar coordinate then the result integral will be:

A) $\int_{\frac{\pi}{3}}^{\frac{\pi}{2}} \int_0^4 re^{r^2}\, drd\theta$

B) $\int_0^{\frac{\pi}{3}} \int_0^4 re^{r^2}\, drd\theta$

C) $\int_{\frac{\pi}{6}}^{\frac{\pi}{2}} \int_0^4 re^{r^2}\, drd\theta$

D) $\int_0^{\frac{\pi}{6}} \int_0^4 re^{r^2}\, drd\theta$

E) $\int_0^{\frac{\pi}{6}} \int_0^4 e^{r^2}\, drd\theta$

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If $|(2\vec{a}+\vec{b})\times(\vec{a}-\vec{b})|=24$, then the area of the parallelogram determined by $\vec{a}$ and $\vec{b}$ is

- A. 8
- B. 4
- C. 3
- D. 12
- E. 6

POWERUNIT

Next page

CamScanner المسوحة ضوئيا بـ

If we change the integral $\int_{-2}^{2}\int_{0}^{\sqrt{4-x^2}}\int_{x^2+y^2}^{8-x^2-y^2} x\, dzdydx$ to cylindrical coordinate, then the result integral will be:

A) $\int_{\frac{\pi}{2}}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2 cos\theta\; dzdrd\theta$

B) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2 cos\theta\; dzdrd\theta$

POWERUNIT

C) $\int_{0}^{\frac{\pi}{2}}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2 cos\theta\; dzdrd\theta$

D) $\int_{0}^{2\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2 cos\theta\; dzdrd\theta$

E) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r cos\theta\; dzdrd\theta$

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Question 7

Not yet answered

Marked out of 3.00

Flag question

If $(-\sqrt{3}, -\sqrt{3}, \sqrt{3})$ is the rectangular coordinate of the point p, then the cylindrical coordinate of p is:

A) $(\sqrt{6}, \frac{3\pi}{4}, \sqrt{3})$

B) $(\sqrt{6}, \frac{7\pi}{4}, \sqrt{3})$

C) $(\sqrt{6}, \frac{5\pi}{4}, \sqrt{3})$

D) $(\sqrt{6}, \frac{\pi}{4}, \sqrt{3})$

E) $(6, \frac{5\pi}{4}, \sqrt{3})$

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Question 6

Not yet answered

Marked out of 4.00

Flag question

Minimize and Maximize $f(x,y,z) = (x+1)^2 + (y+1)^2 + (z+1)^2$

subject to the constraint. $x^2 + y^2 + z^2 - 27 = 0$ to get

(A) (3,3,3) is the point on $f(x,y,z) = (x+1)^2 + (y+1)^2 + (z+1)^2$ farthest from $(0,0,\sqrt{27})$, and $(-3,-3,-3)$ is the point that is closest

(B) $(0,0,\sqrt{27})$ is the point on the sphere $x^2 + y^2 + z^2 = 27$ closest to the point $(-1,-1,-1)$, and $(0,0,-\sqrt{27})$ is the point that is farthest.

POWERUNIT

(C) (3,3,3) is the point on $f(x,y,z) = (x+1)^2 + (y+1)^2 + (z+1)^2$ farthest from $(0,0,\sqrt{27})$, and $(-3,-3,-3)$ is the point that is closest.

(D) (3,3,3) is the point on the sphere $x^2 + y^2 + z^2 = 27$ closest to $(-1,-1,-1)$, and $(-3,-3,-3)$ is the point that is farthest.

(E) (3,3,3) is the point on the sphere $x^2 + y^2 + z^2 = 27$ farthest from the point $(-1,-1,-1)$, and $(-3,-3,-3)$ is the point that is closest.

○ A)

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If $P_1(0,1,0)$, $P_2(4,3,2)$, $P_3(3,4,-1)$ and $P_4(5,6,1)$ are points in space, then one of the following is true .

(A) P_1 , P_2, P_3 and P_4 are coplanar.

(B) The volume of parallelepiped with adjacent edges P_1P_2, P_1P_3, and P_1P_4 equals 16.

(C) The volume of parallelepiped with adjacent edges P_1P_2, P_1P_3, and P_1P_4 equals 12.

(D) The volume of parallelepiped with adjacent edges P_1P_2, P_1P_3, and P_1P_4 equals 3.

(E) The volume of parallelepiped with adjacent edges P_1P_2, P_1P_3, and P_1P_4 equals 2.

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The helix $\vec{r}(t) = < \sin t, \cos t, t >$ intesects the ellipsoid $x^2 + y^2 + 2z^2 = 3$ at $t =$

- A. ± 4
- B. ± 3
- C. ± 1
- D. ± 2
- E. There is no intersection

POWERUNIT

Next page

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If p is the point of intersection between the xy-plane and the line $x = 4 - 2t$, $y = 1 + t$, $z = 3 - t$. Then the equation of the line passes through p and parallel to the line $x = 1 - 2s$, $y = 4s$, $z = 1 + 3s$ is;

A) $x = -2 - 2t$, $y = 4 + 4t$, $z = 3t$

B) $x = 6 - 2t$, $y = 4t$, $z = -4 + 3t$

C) $x = -2t$, $y = 4 + 4t$, $z = 1 + 3t$

D) $x = -2$ [illegible] $2t$, $y = 4 + t$, [illegible] $4t$

E) $x = -2 - 2t$, $y = 4 + t$, $z = -t$

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Question 1

Not yet answered

Marked out of 4.00

Flag question

Let $z + 3e^{xy} + 4xz^2 + \tan y = 10$. Then $\frac{\partial z}{\partial y} =$

(A) $-\frac{1+8xz}{3xe^{xy}+\sec^2 y}$

(B) $-\frac{3xe^{xy}+\sec^2 y}{3ye^{xy}+4z^2}$

(C) $-\frac{3xe^{xy}+\sec^2 y}{8xz}$

(D) $-\frac{3xe^{xy}+\sec^2 y}{1+8xz}$

POWERUNIT

(E) $\frac{3ye^{xy}+4z^2}{3xe^{xy}+\sec^2 y}$

A)

B)

C)

Type here to search

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Minimize $f(x,y,z) = (x-4)^2 + (y-2)^2 + z^2$ subject to the constraint

$x^2 + y^2 - z^2 = 0$ to get

(A) $(2,1,\sqrt{5})$ and $(2,1,-\sqrt{5})$ are the points on the cone $z^2 = x^2 + y^2$ that are closest to

the point $(4,2,0)$.

(B) $(2,1,\sqrt{5})$ and $(2,1,-\sqrt{5})$ are the points on the surface

$z^2 = (x-4)^2 + (y-2)^2$ that are closest to the cone $z^2 = x^2 + y^2$

POWERUNIT

(C) The smallest value of the function $f(x,y,z) = (x-4)^2 + (y-2)^2 + z^2$

that satisfies $x^2 + y^2 = z^2$ occurs only at the point $(2,1,-\sqrt{5})$.

(D) $(1,1,\sqrt{2})$ and $(1,1,-\sqrt{2})$ are the points on the cone $z^2 = x^2 + y^2$ that are closest to

the point (4, 2, 0).

(E) $(4,2,0)$ is the points on the surface $z^2 = (x-4)^2 + (y-2)^2$ that is closest to the cone $z^2 = x^2 + y^2$

الممسوحة ضوئيا بـ CamScanner

If we change the integral $\int_{-2}^{2}\int_{0}^{\sqrt{4-x^2}}\int_{x^2+y^2}^{4-x^2-y^2} x\,dz\,dy\,dx$ to cylindrical coordinate, then the result integral will be:

A) $\int_{\frac{\pi}{2}}^{\pi}\int_{0}^{2}\int_{r^2}^{4-r^2} r^2\cos\theta\,dz\,dr\,d\theta$

B) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{4-r^2} r^2\cos\theta\,dz\,dr\,d\theta$

C) $\int_{0}^{\frac{\pi}{2}}\int_{0}^{2}\int_{r^2}^{4-r^2} r^2\cos\theta\,dz\,dr\,d\theta$

D) $\int_{0}^{2\pi}\int_{0}^{2}\int_{r^2}^{4-r^2} r^2\cos\theta\,dz\,dr\,d\theta$

POWERUNIT

E) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{4-r^2} r\cos\theta\,dz\,dr\,d\theta$

- ○ A)
- ● B)
- ○ C)
- ○ D)
- ○ E)

Clear my choice

CamScanner الممسوحة ضوئيا بـ

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If E is the region below the cone $z = \sqrt{x^2 + y^2}$ and above the cone $z = -\sqrt{x^2 + y^2}$ and between the two spheres $x^2+y^2+z^2 = 4$ and $x^2 + y^2 + z^2 = 9$. Then the integral $\int\int_E\int \sqrt{x^2 + y^2 + z^2}\, dV$ in spherical coordinate equal to:

A) $\int_{\frac{\pi}{4}}^{\pi} \int_0^{2\pi} \int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

B) $\int_0^{\frac{\pi}{4}} \int_0^{2\pi} \int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

C) $\int_{\frac{\pi}{4}}^{\frac{3\pi}{4}} \int_0^{2\pi} \int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

POWERUNIT

D) $\int_{\frac{\pi}{4}}^{\frac{3\pi}{4}} \int_0^{\pi} \int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

E) $\int_{\frac{\pi}{4}}^{\pi} \int_0^{2\pi} \int_2^3 \rho \, d\rho d\theta d\phi$

- ○ A)
- ○ B)
- ◉ C)
- ○ D)
- ○ E)

Clear my choice

CamScanner الممسوحة ضوئيا بـ

If $f(x,y)$ has a continuous second partial derivatives and

$f_x = (-2x + x^2 + 5y^2)e^{-x}$ and $f_y = -10ye^{-x}$, then

(A) $f(0,0)$ is a local minimum and $(2,0)$ is a saddle point.

(B) $(0,0)$ is a saddle point and $f(2,0)$ is a local maximum.

POWERUNIT

(C) $f(0,0)$ is a local maximum and $(2,0)$ is a saddle point.

(D) $f(0,0)$ is a local minimum, $f(-2,0)$ is a local minimum and

$(2,0)$ is a saddle point.

(E) $f(0,0)$ is a local maximum, $f(0,2)$ and $f(2,0)$ are local minimum.

الممسوحة ضوئيا بـ CamScanner

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Let $z + 3e^{xy} + 4yz^2 + \tan y = 10$. Then $\frac{\partial z}{\partial y} =$

(A) $-\frac{1+8yz}{3xe^{xy}+4z^2+\sec^2 y}$

(B) $-\frac{3xe^{xy}+4z^2+\sec^2 y}{3ye^{xy}}$

(C) $-\frac{3xe^{xy}+4z^2+\sec^2 y}{8yz}$

(D) $\frac{3ye^{xy}}{3xe^{xy}+4z^2+\sec^2 y}$

(E) $-\frac{3xe^{xy}+4z^2+\sec^2 y}{1+8yz}$

POWERUNIT

- A)
- B)
- C)
- D)
- E)

المسوحة ضوئيا بـ CamScanner

Question 1

Not yet answered

Marked out of 4.00

Flag question

Let $z + 3e^{xy} + 4xz^2 + \tan y = 10$. Then $\frac{\partial z}{\partial y} =$

(A) $-\frac{1+8xz}{3xe^{xy}+\sec^2 y}$

(B) $-\frac{3xe^{xy}+\sec^2 y}{3ye^{xy}+4z^2}$

(C) $-\frac{3xe^{xy}+\sec^2 y}{8xz}$

(D) $-\frac{3xe^{xy}+\sec^2 y}{1+8xz}$

POWERUNIT

(E) $\frac{3ye^{xy}+4z^2}{3xe^{xy}+\sec^2 y}$

A)

B)

C)

CamScanner الممسوحة ضوئيا بـ

The angle between the two planes $x + 2y + z = 1$ and $x + 3y - z = 2$ is

- ○ A. $cos^{-1}(\frac{4}{\sqrt{66}})$
- ○ B. $cos^{-1}(\frac{-4}{\sqrt{66}})$
- ○ C. $cos^{-1}(\frac{-6}{\sqrt{66}})$
- ◉ D. $cos^{-1}(\frac{6}{\sqrt{66}})$
- ○ E. $cos^{-1}(\frac{5}{\sqrt{66}})$

Clear my choice

POWERUNIT

CamScanner الممسوحة ضوئيا بـ

The helix $\vec{r}(t) = <\ sin\ t,\ cos\ t,\ t\ >$ intesects the ellipsoid $x^2 + y^2 + 2z^2 = 19$ at $t =$

- A. ± 1
- B. ± 4
- C. ± 3
- D. There is no intersection
- E. ± 2

Clear my choice

POWERUNIT

CamScanner الممسوحة ضوئيا بـ

Let $f(x,y)=\frac{x^3\sin^2 y}{x^2+3y^2}$. Then $\lim_{(x,y)\to(0,0)} f(x,y)$

Time

(A) does not exist since if (x,y) approaches (0,0) along the line $x=0$ the limit is 0 and if (x,y) approaches (0,0) along the curve $y=x$ the limit is $\frac{1}{4}$.

(B) exists and equals 0 by using Squeeze Theorem since $0\le\frac{x^2\sin^2 y}{x^2+3y^2}\le\sin^2 y$, and $\lim_{(x,y)\to(0,0)}\sin^2 y=0$.

POWERUNIT

(C) exists and equals 0 since $f(x,y)$ approaches (0,0) along any line of the form $x=my$ the limit is 0.

(D) does not exist since $\frac{0}{0}$ is an indeterminate form.

(E) does not exist since if (x,y) approaches (0,0) along the line $x=3$ the limit is 0 and if (x,y) approaches (0,0) along the line $x=y$ the limit is $\frac{1}{4}$.

- ○ A)
- ○ B)
- ● C)

الممسوحة ضوئيا بـ CamScanner

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If we change the integral $\int_{-2}^{2}\int_{0}^{\sqrt{4-x^2}}\int_{x^2+y^2}^{8-x^2-y^2} x\, dz dy dx$ to cylindrical coordinate, then the result integral will be:

A) $\int_{\frac{\pi}{2}}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2\cos\theta\ dz dr d\theta$

B) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2\cos\theta\ dz dr d\theta$

C) $\int_{0}^{\frac{\pi}{2}}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2\cos\theta\ dz dr d\theta$

D) $\int_{0}^{2\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2\cos\theta\ dz dr d\theta$

E) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r\cos\theta\ dz dr d\theta$

POWERUNIT

- A)
- B)
- C)
- D)
- E)

Clear my choice

here to search

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Question 6

Not yet answered

Marked out of 4.00

Flag question

Minimize and Maximize $f(x,y,z) = (x+1)^2 + (y+1)^2 + (z+1)^2$

subject to the constraint. $x^2 + y^2 + z^2 - 27 = 0$ to get

(A) (3,3,3) is the point on $f(x,y,z) = (x+1)^2 + (y+1)^2 + (z+1)^2$ farthest from $(0,0,\sqrt{27})$, and $(-3,-3,-3)$ is the point that is closest

(B) $(0,0,\sqrt{27})$ is the point on the sphere $x^2 + y^2 + z^2 = 27$ closest to the point $(-1,-1,-1)$, and $(0,0,-\sqrt{27})$ is the point that is farthest.

(C) (3,3,3) is the point on $f(x,y,z) = (x+1)^2 + (y+1)^2 + (z+1)^2$ farthest from $(0,0,\sqrt{27})$, and $(-3,-3,-3)$ is the point that is closest.

(D) (3,3,3) is the point on the sphere $x^2 + y^2 + z^2 = 27$ closest to $(-1,-1,-1)$, and $(-3,-3,-3)$ is the point that is farthest.

(E) (3,3,3) is the point on the sphere $x^2 + y^2 + z^2 = 27$ farthest from the point $(-1,-1,-1)$, and $(-3,-3,-3)$ is the point that is closest.

○ A)

POWERUNIT

CamScanner الممسوحة ضوئيا بـ

Question 5

Not yet answered

Marked out of 4.00

Flag question

If $f(x,y)$ has a continuous second partial derivatives and

$f_x = -x^3 + y$, $f_y = x - y^3$, then

(A) $f(\pm1,1)$ and $f(\pm1,-1)$ are local minimum and (0,0) is a saddle point.

(B) (0,0) is a saddle point and $f(\pm1,1)$ and $f(\pm1,-1)$ are local maximum.

POWERUNIT

(C) $f(\pm1,1)$ and $f(\pm1,-1)$ are local minimum and $f(0,0)$ is a local maximum.

(D) $f(1,1)$ and $f(-1,-1)$ are local minimum and (0,0) is a saddle point.

(E) (0,0) is a saddle point and $f(1,1)$ and $f(-1,-1)$ are local maximum.

○ A)

○ B)

CamScanner الممسوحة ضوئيا بـ

The helix $\vec{r}(t) = < \sin t, \cos t, t >$ intesects the ellipsoid $x^2 + y^2 + 2z^2 = 3$ at $t =$

- A. ± 4
- B. ± 3
- C. ± 1
- D. ± 2
- E. There is no intersection

POWERUNIT

Next page

CamScanner الممسوحة ضوئيا بـ

The integral that represents the volume of the solid enclosed by the coordinate planes and the plane $x + 2y + z = 2$ is:

A) $\int_0^2 \int_0^1 \int_0^{2-x-2y} dzdydx$

B) $\int_0^2 \int_0^{1-\frac{x}{2}} \int_0^{2-x-2y} (2 - x - 2y)dzdydx$

C) $\int_0^2 \int_0^{1-\frac{x}{2}} \int_0^{2-x-2y} dzdydx$

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D) $\int_0^2 \int_0^1 \int_0^2 dzdydx$

E) $\int_0^2 \int_0^1 \int_0^2 (2 - x - 2y)dzdydx$

○ A)

○ B)

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Question **2**

Not yet answered

Marked out of 4.00

Flag question

Let $f(x, y, z) = x^2y^4z^4$. Then

(A) the maximum directional derivative of f at the point $(1,1,1)$ is 6 and it occurs in the direction of $\langle \frac{2}{3}, \frac{1}{3}, \frac{2}{3} \rangle$.

(B) the maximum directional derivative of f at the point $(1,1,1)$ is 6 and it occurs in the direction of $\langle \frac{1}{3}, \frac{2}{3}, \frac{2}{3} \rangle$.

(C) the minimum directional derivative of f at the point $(1,1,1)$ is 6 and it occurs in the direction of $\langle -\frac{1}{3}, -\frac{2}{3}, -\frac{2}{3} \rangle$.

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(D) the maximum directional derivative of f at the point $(1,1,1)$ is $\sqrt{3}$ and it occurs in the direction of $\langle \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}} \rangle$.

(E) the minimum directional derivative of f at the point $(1,1,1)$ is $-\sqrt{3}$ and it occurs in the direction of $\langle -\frac{1}{\sqrt{3}}, -\frac{1}{\sqrt{3}}, -\frac{1}{\sqrt{3}} \rangle$.

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The equation of the plane that contains the two lines
$L_1 : x = 1 + 2t,\ y = 1 + t,\ z = 2 + t,$ and
$L_2 : x = 1 - 2s,\ y = 1 + 3s,\ z = 2 + s$ is:

POWEROUNIT

A) $-4x - 4y + 4z = 0$
B) $-2x - 4y + 8z = 10$
C) $2x + 4z = 10$
D) $-4x + 8z = 12$
E) $2x - 4y - 8z = -18$

B

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The region in $\mathbb{R}^3$ defined by the following inequalities

$4 \le x^2 + y^2 \le 16$, $z < 1$ is

(A) All points that lie between the two circular cylinders $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and below the plane $z = 1$.

(B) All points that lie between (or on) the two circles $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and above the line $z = 1$.

(C) All points that lie between (or on) the two circles $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and below the line $z = 1$.

(D) All points that lie between (or on) the two circular cylinders $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and below the plane $z = 1$.

(E) All points that lie on the two circular cylinders $x^2 + y^2 = 4$ and $x^2 + y^2 = 16$ and below the plane $z = 1$.

- ○ A
- ○ B
- ○ C
- ◉ D
- ○ E

Clear my choice

POWERUNIT

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The quadric surface $y^2 + 2 = 2y + x^2 + z^2$ is

(A) hyperboloid of two sheets with axis the $y-axis$ and vertices (0,1,0) and (0,−1,0).

(B) circular paraboloid with axis the positive $y-axis$ and vertex (0,1,0).

(C) ellipsoid with center (0,1,0).

(D) elliptic cone whose axis the $y-axis$ and the vertex (0,1,0).

(E) hyperboloid of one sheet whose axis the $y-axis$ and center (0,1,0).

A

B

C

D

E

Clear my choice

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

If $\vec{v}$ and $\vec{w}$ are two nonzero vectors in space such that $(2\vec{w} - 6\vec{v})$ and $(3\vec{v} + \vec{w})$ are orthogonal, then

(A) $|\vec{w}|^2 = 9|\vec{v}|^2$.
(B) $\vec{v}$ and $(3\vec{v} + \vec{w})$ are orthogonal.
(C) $\vec{v}$ and $\vec{w}$ are orthogonal.
(D) $|\vec{w}|^2 = 3|\vec{v}|^2$.
(E) $\vec{w} = -3\vec{v}$ or $\vec{w} = 3\vec{v}$.

A

B

C

D

E

Clear my choice

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

Question 5

Not yet answered

Marked out of 4.00

Flag question

If $f(x,y)$ has a continuous second partial derivatives and

$f_x = -x^3 + y$, $f_y = x - y^3$, then

(A) $f(\pm1,1)$ and $f(\pm1,-1)$ are local minimum and (0,0) is a saddle point.

(B) (0,0) is a saddle point and $f(\pm1,1)$ and $f(\pm1,-1)$ are local maximum.

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(C) $f(\pm1,1)$ and $f(\pm1,-1)$ are local minimum and $f(0,0)$ is a local maximum.

(D) $f(1,1)$ and $f(-1,-1)$ are local minimum and (0,0) is a saddle point.

(E) (0,0) is a saddle point and $f(1,1)$ and $f(-1,-1)$ are local maximum.

○ A)

○ B)

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Question 11

Not yet answered

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Flag question

If we convert the integral $\int_0^{2\sqrt{3}} \int_{\frac{x}{\sqrt{3}}}^{\sqrt{16-x^2}} e^{x^2+y^2}\, dy\, dx$, to polar coordinate then the result integral will be:

A) $\int_{\frac{\pi}{6}}^{\frac{\pi}{2}} \int_0^4 e^{r^2}\, dr d\theta$

POWERUNIT

B) $\int_0^{\frac{\pi}{3}} \int_0^4 re^{r^2}\, dr d\theta$

C) $\int_0^{\frac{\pi}{6}} \int_0^4 re^{r^2}\, dr d\theta$

D) $\int_{\frac{\pi}{3}}^{\frac{\pi}{2}} \int_0^4 re^{r^2}\, dr d\theta$

E) $\int_{\frac{\pi}{6}}^{\frac{\pi}{2}} \int_0^4 re^{r^2}\, dr d\theta$

○ A)

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The curvature of the helix $\vec{r}(t) = \; < 4\, cos\, t, 4\, sin\, t,\; 4t >$ is

- A. $\frac{1}{8}$
- B. $\frac{1}{12}$
- C. $\frac{1}{10}$
- D. $\frac{1}{6}$
- E. $\frac{1}{4}$

POWERUNIT

Next page

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If $|(2\vec{a}+\vec{b})\times(\vec{a}-\vec{b})| = 24$, then the area of the parallelogram determined by $\vec{a}$ and $\vec{b}$ is

- A. 8
- B. 4
- C. 3
- D. 12
- E. 6

POWERUNIT

Next page

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Let $f(x,y,z) = x^4 z + y^2 z^3$. Then

(A) the minimum directional derivative of f at the point $(1,1,1)$ is -6

and it occurs in the direction of $\left(-\frac{2}{3}, -\frac{2}{3}, -\frac{1}{3}\right)$.

(B) the maximum directional derivative of f at the point $(1,1,1)$ is $\sqrt{3}$

POWERUNIT

and it occurs in the direction of $\left(\frac{2}{\sqrt{3}}, \frac{2}{\sqrt{3}}, \frac{2}{\sqrt{3}}\right)$.

(C) the minimum directional derivative of f at the point $(1,1,1)$ is 6

and it occurs in the direction of $\left(-\frac{2}{3}, -1, -\frac{2}{3}\right)$.

(D) the maximum directional derivative of f at the point $(1,1,1)$ is 6

and it occurs in the direction of $\left(\frac{2}{3}, \frac{1}{3}, \frac{2}{3}\right)$.

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If we convert the integral $\int_0^2 \int_{\sqrt{3}y}^{\sqrt{16-y^2}} e^{x^2+y^2}\, dx dy$, to polar co-ordinate then the result integral will be:

A) $\int_{\frac{\pi}{3}}^{\frac{\pi}{2}} \int_0^4 re^{r^2}\, dr d\theta$

B) $\int_0^{\frac{\pi}{3}} \int_0^4 re^{r^2}\, dr d\theta$

C) $\int_{\frac{\pi}{6}}^{\frac{\pi}{2}} \int_0^4 re^{r^2}\, dr d\theta$

D) $\int_0^{\frac{\pi}{6}} \int_0^4 re^{r^2}\, dr d\theta$

E) $\int_0^{\frac{\pi}{6}} \int_0^4 e^{r^2}\, dr d\theta$

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The angle between the two planes $x + 2y + z = 1$ and $x + y + 2z = 2$ is

- A. $cos^{-1}(\frac{4}{6})$
- B. $cos^{-1}(1)$
- C. $cos^{-1}(-1)$
- D. $cos^{-1}(\frac{-4}{6})$
- E. $cos^{-1}(\frac{5}{6})$

POWERUNIT

Next page

المسوحة ضوئيا بـ CamScanner

If E is the region above the cone $z = -\sqrt{x^2+y^2}$ and between the two spheres $x^2+y^2+z^2=4$ and $x^2+y^2+z^2=9$. Then the integral $\int\int_E\int \sqrt{x^2+y^2+z^2}\,dV$ in spherical coordinate equal to:

A) $\int_{\frac{\pi}{4}}^{\pi}\int_0^{2\pi}\int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

B) $\int_0^{\frac{\pi}{4}}\int_0^{2\pi}\int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

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C) $\int_0^{\frac{3\pi}{4}}\int_0^{2\pi}\int_2^3 \rho \, d\rho d\theta d\phi$

D) $\int_0^{\frac{3\pi}{4}}\int_0^{2\pi}\int_2^3 \rho^3 \sin\phi \, d\rho d\theta d\phi$

E) $\int_{\frac{\pi}{4}}^{\pi}\int_0^{2\pi}\int_2^3 \rho \, d\rho d\theta d\phi$

- A)
- B)

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Question 7

Not yet answered

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Flag question

If $(-\sqrt{3}, -\sqrt{3}, \sqrt{3})$ is the rectangular coordinate of the point p, then the cylindrical coordinate of p is:

A) $(\sqrt{6}, \frac{3\pi}{4}, \sqrt{3})$

B) $(\sqrt{6}, \frac{7\pi}{4}, \sqrt{3})$

C) $(\sqrt{6}, \frac{5\pi}{4}, \sqrt{3})$

D) $(\sqrt{6}, \frac{\pi}{4}, \sqrt{3})$

E) $(6, \frac{5\pi}{4}, \sqrt{3})$

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If we change the integral $\int_{-2}^{2}\int_{0}^{\sqrt{4-x^2}}\int_{x^2+y^2}^{8-x^2-y^2} x\, dzdydx$ to cylindrical coordinate, then the result integral will be:

A) $\int_{\frac{\pi}{2}}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2 cos\theta\ dzdrd\theta$

B) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2 cos\theta\ dzdrd\theta$

C) $\int_{0}^{\frac{\pi}{2}}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2 cos\theta\ dzdrd\theta$

D) $\int_{0}^{2\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r^2 cos\theta\ dzdrd\theta$

E) $\int_{0}^{\pi}\int_{0}^{2}\int_{r^2}^{8-r^2} r cos\theta\ dzdrd\theta$

POWEROUNIT

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If we change the order of the integral $\int_0^2 \int_{x^3}^8 f(x,y)\, dydx$, then the result integral will be:

A) $\int_0^8 \int_{y^{\frac{1}{3}}}^2 f(x,y)\, dxdy$

B) $\int_0^8 \int_0^{y^{\frac{1}{3}}} f(x,y)\, dxdy$

POWERUNIT

C) $\int_0^2 \int_8^{y^{\frac{1}{3}}} f(x,y)\, dxdy$

D) $\int_{x^3}^8 \int_0^2 f(x,y)\, dxdy$

E) $\int_0^8 \int_{y^{\frac{1}{3}}}^2 f(x,y)\, dxdy$

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If $\vec{v}$ and $\vec{w}$ are two nonzero vectors in space such that $(2\vec{v}+\vec{w})$ and $(2\vec{w}-4\vec{v})$ are orthogonal, then

(A) $|\vec{v}|^2 = 4|\vec{w}|^2$.

(B) $\vec{v}$ and $(\vec{v}+2\vec{w})$ are orthog

(C) $\vec{v} = 2\vec{w}$ or $\vec{w} = -2\vec{v}$.

(D) $\vec{v}$ and $\vec{w}$ are orthogonal.

(E) $|\vec{w}|^2 = 4|\vec{v}|^2$.

POWERUNIT

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Question 13

Not yet answered

Marked out of 4.00

Flag question

Let $f(x,y) = \frac{x^3y}{x^6+3y^2}$. Then $\lim\limits_{(x,y)\to(0,0)} f(x,y)$

(A) does not exist since if (x,y) approaches $(0,0)$ along the line $x = 0$ the limit is 0 and if (x,y) approaches $(0,0)$ along the curve $y = x^3$ the limit is $\frac{1}{4}$.

(B) exists and equals 0 since if (x,y) approaches $(0,0)$ along any path of the form $y = mx$ or $y = mx^2$ the limit is 0

(C) exists and equals 0 since $\lim\limits_{(x,y)\to(0,0)} y = 0$ and $0 \le \frac{x^3}{x^6+3y^2} \le 1$.

(D) does not exist since $\frac{0}{0}$ is an indeterminate form.

(E) does not exist since if (x,y) approaches $(0,0)$ along the line $x = 3$ the limit is 0 and if (x,y) approaches $(0,0)$ along the line $x = \sqrt[3]{y}$ the limit is $\frac{1}{4}$

POWERUNIT

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If we change the order of the integral $\int_0^9 \int_{\sqrt{x}}^3 f(x,y)\, dydx$, then the result integral will be:

A) $\int_0^3 \int_0^{y^2} f(x,y)\, dxdy$

B) $\int_0^3 \int_{y^2}^9 f(x,y)\, dxdy$

POWERUNIT

C) $\int_0^9 \int_3^{y^2} f(x,y)\, dxdy$

D) $\int_{\sqrt{x}}^3 \int_0^9 f(x,y)\, dxdy$

E) $\int_0^{\sqrt{3}} \int_{y^2}^3 f(x,y)\, dxdy$

○ A)

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Time left

Question 15

Not yet answered

Marked out of 3.00

Flag question

The curvature of the helix $\vec{r}(t) = < 3\cos t, 3\sin t, 3t >$ is

A. $\frac{1}{10}$

B. $\frac{1}{4}$

C. $\frac{1}{8}$

D. $\frac{1}{6}$

E. $\frac{1}{12}$

POWERUNIT

Finish attempt

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- ○ 2y+2z=0

10. *

(2 Points)

$\vec{a}=(1,1,1), \vec{b}=(-1,0,1)$

$\dfrac{|\vec{a}\bullet\vec{b}-\vec{a}|}{\vec{a}\cdot\vec{b}-2} =$

- ○ 3
- ○ $-\frac{3}{2}$
- ○ 1
- ○ -1
- ○ -3
- ○ $\frac{3}{2}$

POWEROUNIT

11. *

(2 Points)

$|\vec{a}-\vec{b}|=\sqrt{13}, |\vec{a}-2\vec{b}|=\sqrt{35}$

الممسوحة ضوئيا بـ CamScanner

- ○ 12
- ○ 8

6. Find the directional derivative of *
(2 Points)

$f(x,y)=x^2+xe^{xy}$ at the point $A(1,0)$ in the direction from A to $B(0,5)$

- ○ $\frac{-4}{\sqrt{2}}$
- ○ $\frac{-2}{\sqrt{2}}$
- ○ $\frac{3}{\sqrt{37}}$
- ○ $\frac{1}{\sqrt{17}}$
- ○ $\frac{2}{\sqrt{26}}$
- ○ $\frac{-1}{\sqrt{5}}$

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7. *
(3 Points)

$$\int_{-2}^{0}\int_{-x}^{2} f\,dy\,dx + \int_{0}^{4}\int_{\sqrt{x}}^{2} f\,dy\,dx =$$

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$\int_{\frac{\pi}{2}} \int_0 \int_{-1} rdzdrd\theta$

9. Find the equation of the plane passing through the points *

(3 Points)

$A(0,0,0), B(0,1,2)$ and parallel to the tangent plane to the surface $z=x^2y$ at $(1,1,1)$

- 4x-6y+2z=0
- 6x-10y+2z=0
- 5x-8y+2z=0
- 3x-4y+2z=0
- x+2z=0
- 2y+2z=0

POWERUNIT

10. *

(2 Points)

$\vec{a}=(1,1,1), \vec{b}=(-1,0,1)$

$$\frac{|\vec{a}\cdot\vec{b}-\vec{a}|}{\vec{a}\cdot\vec{b}-2}=$$

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10:26

○ $\frac{x-1}{2} = y = \frac{z-2}{-1}$

3. *

(2 Points)

$$\int_{-4}^{1}\int_{0}^{\sqrt{24+2x-x^2}} -1\,dy\,dx =$$

○ $-\frac{9\pi}{4}$

○ $-\pi$

○ $-\frac{49\pi}{4}$

○ -9π

POWERUNIT

○ -4π

○ $-\frac{25\pi}{4}$

4. Using double integrals, write the volume of the solid bounded by: *

(2 Points)

$z=x^2+y^2+4, z=-4,$

$y=x^2$ and $y=2-x$

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- ◯ $\int_{-2}^{1}\int_{x^2}^{2}(x^2+y^2+4)dydx$
- ◯ $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+6)dydx$

5. *

(2 Points)

Along the path

$y=x^2+1$ find

$$\lim_{(x,y)\to(0,1)} \frac{-4x^2-y+1}{\cos x+y-x^2-2}$$

- ◯ -4
- ◯ -8
- ◯ -6
- ◯ 10
- ◯ 12
- ◯ 8

POWERUNIT

6. Find the directional derivative of *

(2 Points)

$f(x,y)=x^2+xe^{y}$ at the point $A(1,0)$ in the direction from A to $B(0,5)$

- ◯ $\frac{-4}{5}$

CamScanner المسوحة ضوئيا بـ

- ○ $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{2\sin\theta} f(r\cos\theta, r\sin\theta))rdrd\theta$

2. Find symmetric equations of the normal line to the surface: *
(2 Points)

$z = x(1 + e^{xy})$ at the point $(2, 0, 4)$

- ○ $\frac{x-2}{2} = \frac{y}{4} = \frac{z-4}{-1}$
- ○ $\frac{x+3}{2} = \frac{y}{9} = \frac{z+6}{-1}$
- ○ $\frac{x-3}{2} = \frac{y}{9} = \frac{z-6}{-1}$
- ○ $\frac{x+1}{2} = y = \frac{z+2}{-1}$
- ○ $\frac{x+2}{2} = \frac{y}{4} = \frac{z+4}{-1}$
- ○ $\frac{x-1}{2} = y = \frac{z-2}{-1}$

POWERUNIT

3. *
(2 Points)

$\int_{-4}^{1} \int_0^{\sqrt{24+2x-x^2}} -1dydx =$

- ○ $-\frac{9\pi}{4}$

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$\int_{-2}^{1} \int_{x^2}^{2-x} (x^2$ [redacted]

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10:26

Final. .Exam. .Calculus (3)-Section 4 (10177...

$-\frac{\quad}{4}$

4. Using double integrals, write the volume of the solid bounded by: *

(2 Points)

$z=x^2+y^2+4, z=-4,$

$y=x^2$ and $y=2-x$

- $\int_{-2}^{1} \int_{x^2}^{2-x} (x^2+y^2+10)\,dydx$
- $\int_{-2}^{1} \int_{x^2}^{2-x} (x^2+y^2+12)\,dydx$
- $\int_{-2}^{1} \int_{x^2}^{2-x} (x^2+y^2+2)\,dydx$
- $\int_{-2}^{1} \int_{x^2}^{2-x} (x^2+y^2+8)\,dydx$

POWEROUNIT

- $\int_{-2}^{1} \int_{x^2}^{2-x} (x^2+y^2+4)\,dydx$
- $\int_{-2}^{1} \int_{x^2}^{2-x} (x^2+y^2+6)\,dydx$

5. *

(2 Points)

Along the path

$y=x^2+1$ find

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1. *

(2 Points)

$\int_0^5 \int_{-\sqrt{10y-y^2}}^{-y} f(x,y)\,dx\,dy=$

- ○ $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{6\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- ○ $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{8\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- ○ $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{4\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- ○ $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{12\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- ○ $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{10\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- ○ $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{2\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$

POWERUNIT

2. Find symmetric equations of the normal line to the surface: *

(2 Points)

$z = x(1 + e^{xy})$ at the point $(2, 0, 4)$

- ○ $\frac{x-2}{2} = \frac{y}{4} = \frac{z-4}{-1}$
- ○ $\frac{x+3}{2} = \frac{y}{9} = \frac{z+6}{-1}$
- ○ $x-3 \quad y \quad z-6$

CamScanner الممسوحة ضوئيا بـ

- ( ) $\frac{-1}{\sqrt{5}}$

7. *

(3 Points)

$\int_{-2}^{0}\int_{-x}^{2} f\,dy\,dx +$
$\int_{0}^{4}\int_{\sqrt{x}}^{2} f\,dy\,dx =$

- ( ) $\int_0^2 \int_{-y}^{y^2} f\,dx\,dy$
- ( ) $\int_0^1 \int_{-y}^{y^2} f\,dx\,dy$
- ( ) $\int_0^3 \int_{-y}^{y^2} f\,dx\,dy$
- ( ) $\int_0^4 \int_{-y}^{y^2} f\,dx\,dy$
- ( ) $\int_0^5 \int_{-y}^{y^2} f\,dx\,dy$
- ( ) $\int_0^6 \int_{-y}^{y^2} f\,dx\,dy$

POWEROUNIT

8. Using cylindrical coordinates, write the volume of the solid bounded by *

(2 Points)

$z=\sqrt{x^2+y^2}, z=-1$

المسوحة ضوئيا بـ CamScanner

11. *

(2 Points)

$\left|\vec{a}-\vec{b}\right|=\sqrt{13}, \left|\vec{a}-2\vec{b}\right|=\sqrt{35}$

and $\left|\vec{a}\right|=\sqrt{3}$. The angle

between $\vec{a}$ and $\vec{b}$ is

- ◯ 121.5
- ◯ 118.1
- ◯ 61.9
- ◯ 58.5
- ◯ 70.5
- ◯ 109.5

POWERUNIT

12. Let E be the solid enclosed by *

(3 Points)

$z=1-x+y, z=1-x,$

$y=2-x$ and the yz-plane.

Then $\iiint_E \frac{2}{(2-x)^2} dV=$

- ◯ 4

المسوحة ضوئيا بـ CamScanner

-1984

تعليق اعجبني

10:27

Final. .Exam. .Calculus (3)-Section 4 (10177...

14. Let D be the region in the third quadrant bounded by: *
(2 Points)

$x^2+y^2=9$ and
$x^2+y^2=100$, then
$\int\int_D 3(x+y)\,dA=$

- -1946
- -1984
- -1872
- -1750
- -1998
- -1568

15. *
(3 Points)

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

8. Using cylindrical coordinates, write the volume of the solid bounded by *

(2 Points)

$z=\sqrt{x^2+y^2}, z=-1$

and $(x+4)^2+y^2=16$

- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-8\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-10\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-2\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-12\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-4\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-6\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$

POWEROUNIT

9. Find the equation of the plane passing through the points *

(3 Points)

$A(0,0,0), B(0,1,2)$ and parallel to the tangent plane to the surface $z=x^2y$ at $(1,1,1)$

تعليق أعجبني

الممسوحة ضوئيا بـ CamScanner

13. *
(2 Points)

$\int_0^1 \int_{5y}^5 e^{2x^2 y}\,dxdy =$

- $\frac{e^{98}-1}{28}$
- $\frac{e^{50}-1}{20}$
- $\frac{e^{32}-1}{16}$
- $\frac{e^{72}-1}{24}$
- $\frac{e^{18}-1}{12}$
- $\frac{e^{8}-1}{8}$

POWERUNIT

14. Let D be the region in the third quadrant bounded by: *
(2 Points)

$x^2+y^2=9$ and

$x^2+y^2=100$, then

$\iint_D 3(x+y)\,dA=$

المسوحة ضوئيا بـ CamScanner

- $\frac{\ }{\sqrt{3}}$

17. *

(2 Points)

$\int_0^1 \int_1^{\sqrt{3}} x^3 e^{x^2 y}\,dx\,dy =$

- $\frac{e^6-e-5}{2}$
- $\frac{e^9-e-8}{2}$
- $\frac{e^4-e-3}{2}$
- $\frac{e^2-e-1}{2}$
- $\frac{e^{36}-e-35}{2}$
- $\frac{e^3-e-2}{2}$

POWERUNIT

18. Find the volume of the parallelpiped determined by *

(2 Points)

$\vec{a}=\langle 1,1,1\rangle, \vec{b}=\langle -1,1,1\rangle$

and $\vec{c}=\langle 1,1,-3\rangle$

- 4

CamScanner الممسوحة ضوئيا بـ

10:27

Final. .Exam. .Calculus (3)-Section 4 (10177...

○ -1568

15. *

(3 Points)

$$\int_0^2 \int_{-\sqrt{4-y^2}}^0 \int_0^{\sqrt{x^2+y^2}} 12\tan^{-1}\left(\frac{y}{x}\right)dz\,dx\,dy=$$

○ $18\pi^2$

○ $9\pi^2$

○ $12\pi^2$

○ $15\pi^2$

○ $6\pi^2$

POWERUNIT

○ $3\pi^2$

16. *

(2 Points)

Let r = radius of the sphere

$x^2+y^2+z^2+2z=0$.

The distance from the center

of the sphere to the plane

$x+y-z=3r$ is

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10:27

Final. .Exam. .Calculus (3)-Section 4 (10177...

- $\frac{e^3-e-2}{2}$

18. Find the volume of the parallelpiped determined by *

(2 Points)

$\vec{a}=\langle 1,1,1\rangle, \vec{b}=\langle -1,1,1\rangle$

and $\vec{c}=\langle 1,1,-3\rangle$

- 4
- 12
- 6
- 8
- 2
- 10

Submit

POWERUNIT

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16. *
(2 Points)

Let r = radius of the sphere
$x^2+y^2+z^2+2z=0$.
The distance from the center
of the sphere to the plane
$x+y-z=3r$ is

- $\frac{6}{\sqrt{3}}$
- $\frac{4}{\sqrt{3}}$
- $\frac{2}{\sqrt{3}}$
- $\frac{5}{\sqrt{3}}$
- $\frac{1}{\sqrt{3}}$
- $\frac{3}{\sqrt{3}}$

POWERUNIT

17. *
(2 Points)

$\int_0^1 \int_1^{\sqrt{3}} x^3 e^{x^2 y} dx dy =$

الممسوحة ضوئيا بـ CamScanner

12. Let E be the solid enclosed by *

(3 Points)

$z=1-x+y, z=1-x,$

$y=2-x$ and the yz-plane.

Then $\iiint_E \frac{2}{(2-x)^2}\, dV =$

- ◯ 4
- ◯ 3
- ◯ 1
- ◯ 6
- ◯ 5
- ◯ 2

13. *

POWERUNIT

(2 Points)

$\int_0^1 \int_{5y}^5 e^{2x^2 y}\, dx\, dy =$

- ◯ $\frac{e^{98}-1}{28}$
- ◯ $\frac{e^{50}-1}{20}$
- ◯ $\frac{e^{32}-1}{16}$

تعليق　　أعجبني

الممسوحة ضوئيا بـ CamScanner

نقطتان (2) *

The curvature of the curve $\vec{r}(t) = \langle t, t^2, -t^3 \rangle$, is

(A) $\dfrac{\sqrt{6t^2-6t+2}}{(1+4t^2+9t^4)^{3/2}}$

(B) $\dfrac{\sqrt{36t^4-36t^2+4}}{(1+4t^2+9t^4)^{3/2}}$

(C) $\dfrac{\sqrt{36t^4+36t^2+4}}{(1+4t^2+9t^4)^{1/2}}$

(D) $\dfrac{\sqrt{36t^4+36t^2+4}}{(1+4t^2+9t^4)^{3/2}}$

(E) $\dfrac{\sqrt{36t^4+36t^2+4}}{(1+4t^2+9t^4)^{3}}$

POWERUNIT

(a) ○

(b) ○

(c) ○

(d) ○

(e) ○

الممسوحة ضوئيا بـ CamScanner

The curvature of the curve of the function $f(x) = 3\ln x$, is

(A) $\frac{3}{x^2(1+\frac{9}{x^2})^{3/2}}$

(B) $\frac{3}{x^2(1-\frac{9}{x^2})^{3/2}}$

(C) $\frac{9}{x^2(1+\frac{3}{x^2})^{3/2}}$

(D) $\frac{-3}{x^2(1-\frac{9}{x^2})^{3/2}}$

(E) $\frac{-3}{x^2(1+\frac{9}{x^2})^{3/2}}$

(a)

(b)

(c)

(d)

(e)

POWERUNIT

نقطتان (2) *

The length of the curve $\vec{r}(t) = \langle t, 2\cos t, 2\sin t\rangle$, $-2 \le t \le 2$, is

(A) $4\sqrt{5}$

(B) $6\sqrt{5}$

(C) $2\sqrt{5}$

(D) $2\sqrt{3}$

(E) 4

الممسوحة ضوئيا بـ CamScanner

حساب التفاضل والتكامل 3 / جميع الشعب

السؤال 6

تم حفظ الأجابة

تم تمييزه من 2.00

سؤال العلم

If $\mathbf{r}'(\mathrm{t}) =< 3\cos 3t\,, \cos t\,, 2\sin 2t >$ and

$\mathbf{r}\left(\frac{\pi}{6}\right) = \langle 1,1,3 \rangle$ then $r(t) =$

A) $< -\cos 2t + \frac{3}{2}\,, \sin t + \frac{1}{2}\,, \sin 3t + 2 >$

B) $< \sin t + \frac{1}{2}\,, -\cos 2t + \frac{3}{2}\,, \sin 3t + 2 >$

C) $< \sin t + \frac{1}{2}\,, \sin 3t\,, -\cos 2t + \frac{7}{2} >$

D) $< \sin 3t\,, \sin t + \frac{1}{2}\,, -\cos 2t + \frac{7}{2} >$

E) $< -\cos 2t + \frac{3}{2}\,, \sin 3t\,, \sin t + \frac{5}{2} >$

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

B) $e^{xyz} \approx 1+z$

C) $e^{xyz} \approx 1+y$

D) $e^{xyz} \approx 1+x$

E) $e^{xyz} \approx 1+x+z$

اختر واحدا:

- أ
- ب
- ج
- د
- ه

POWERUNIT

مسح خياري

الصفحة السابقة الصفحة

التالية

موعد الامتحان القصيرالثالث ←

الممسوحة ضوئيا بـ CamScanner

The linear approximation of e^{xyz} at (0,1,1) is:

A) $e^{xyz} \approx 1 + x + y$
B) $e^{xyz} \approx 1 + z$
C) $e^{xyz} \approx 1 + y$
D) $e^{xyz} \approx 1 + x$
E) $e^{xyz} \approx 1 + x + z$

اختر واحدا:

- أ
- ب
- ج
- د
- ه

مسح خياري

POWERUNIT

الممسوحة ضوئيا بـ CamScanner

An equation of the tangent plane of the surface $z = x\sin(x + y)$, at the point $(-3, 3, 0)$ is:

(A) $z = 3(x + 3) - 3(y - 3)$

(B) $z = -3(x + 3) + 3(y - 3)$

(C) $z = -3(x + 3) - 3(y + 3)$

(D) $z = -3(x - 3) - 3(y - 3)$

(E) $z = -3(x + 3) - 3(y - 3)$

POWERUNIT

A

B

C

D

E

CamScanner الممسوحة ضوئيا بـ

The length of the curve

$\vec{r}(t) = \langle t, 2\cos t, 2\sin t \rangle$, $-2 \le t \le 2$, is

(A) $4\sqrt{5}$

POWERUNIT

(B) $6\sqrt{5}$

(C) $2\sqrt{5}$

(D) $2\sqrt{3}$

(E) 4

المسوحة ضوئيا بـ CamScanner

The curve defined by the vector equation
$\vec{r}(t) = \langle 2\cos t, -2\sin t, 1\rangle$ is

(A) A circle centered at (0,0,1) with radius 2 traversed in the clockwise direction.

(B) A circle centered at (0,0,1) with radius 2 traversed in the counterclockwise direction.

(C) A circle centered at (0,0,2) with radius 2 traversed in the clockwise direction.

(D) A helix with axis is the z- axis traversed in the upward direction.

(E) A helix with axis is the z- axis traversed in the downward direction.

(a) ○

(b) ○

(c) ○

(d) ○

(e) ○

POWERUNIT

*

نقطتان (2)

Parametric equations of the tangent line to the curve
$\vec{r}(t) = \langle 2t, e^{t}, e^{-t}\rangle$ at $t = 0$ is

(A) $x = 2t,\ \ y = 1 + t,\ z = 1 + t$

(B) $x = 2t,\ \ y = 1 + t,\ z = 1 - t$

(C) $x = 2 + 2t,\ \ y = 1 + t,\ z = 1 - t$

(D) $x = 2 + 2t,\ \ y = 1 + t,\ z = 1 + t$

(E) $x = 2 + 2t,\ \ y = 1 - t,\ z = 1 + t$

المسوحة ضوئيا بـ CamScanner

نقطتان (2) *

The curvature of the curve $\vec{r}(t) = \langle t, t^2, -t^3 \rangle$, is

(A) $\dfrac{\sqrt{6t^2-6t+2}}{(1+4t^2+9t^4)^{3/2}}$

(B) $\dfrac{\sqrt{36t^4-36t^2+4}}{(1+4t^2+9t^4)^{3/2}}$

(C) $\dfrac{\sqrt{36t^4+36t^2+4}}{(1+4t^2+9t^4)^{1/2}}$

(D) $\dfrac{\sqrt{36t^4+36t^2+4}}{(1+4t^2+9t^4)^{3/2}}$

(E) $\dfrac{\sqrt{36t^4+36t^2+4}}{(1+4t^2+9t^4)^{3}}$

POWEROUNIT

(a) ○

(b) ○

(c) ○

(d) ○

(e) ○

الممسوحة ضوئيا بـ CamScanner

- ○ $\frac{x-1}{2} = y = \frac{z-2}{-1}$

3. *

(2 Points)

$$\int_{-4}^{1}\int_{0}^{\sqrt{24+2x-x^2}} -1\,dy\,dx =$$

- ○ $-\frac{9\pi}{4}$
- ○ $-\pi$
- ○ $-\frac{49\pi}{4}$
- ○ -9π
- ○ -4π
- ○ $-\frac{25\pi}{4}$

POWERUNIT

4. Using double integrals, write the volume of the solid bounded by: *

(2 Points)

$z=x^2+y^2+4, z=-4,$

$y=x^2$ and $y=2-x$

- ○ $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+10)\,dy\,dx$
- ○ $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+12)\,dy\,dx$
- ○ [illegible]

أب، الساعة ١٠:٥١ ص

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الممسوحة ضوئيا بـ CamScanner

10:26

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- $\frac{-1}{\sqrt{5}}$

7. *

(3 Points)

$\int_{-2}^{0}\int_{-x}^{2} f\,dy\,dx + \int_{0}^{4}\int_{\sqrt{x}}^{2} f\,dy\,dx =$

- $\int_{0}^{2}\int_{-y}^{y^2} f\,dx\,dy$
- $\int_{0}^{1}\int_{-y}^{y^2} f\,dx\,dy$
- $\int_{0}^{3}\int_{-y}^{y^2} f\,dx\,dy$
- $\int_{0}^{4}\int_{-y}^{y^2} f\,dx\,dy$
- $\int_{0}^{5}\int_{-y}^{y^2} f\,dx\,dy$
- $\int_{0}^{6}\int_{-y}^{y^2} f\,dx\,dy$

POWERUNIT

8. Using cylindrical coordinates, write the volume of the solid bounded by *

(2 Points)

$z=\sqrt{x^2+y^2}, z=-1$

and $(x+4)^2+y^2=16$

3π

CamScanner المسوحة ضوئيا بـ

○ 12

○ 8

6. Find the directional derivative of *
(2 Points)

$f(x,y)=x^2+xe^{xy}$ at the point $A(1,0)$ in the direction from A to $B(0,5)$

○ $\frac{-4}{\sqrt{2}}$

○ $\frac{-2}{\sqrt{2}}$

○ $\frac{3}{\sqrt{37}}$

○ $\frac{1}{\sqrt{17}}$

POWERUNIT

○ $\frac{2}{\sqrt{26}}$

○ $\frac{-1}{\sqrt{5}}$

7. *
(3 Points)

$\int_{-2}^{0} \int_{-x}^{2} f\,dydx +$
$\int_{0}^{4} \int_{\sqrt{x}}^{2} f\,dydx =$

أب، الساعة ١٠:٥١ ص
أعجبني
تعليق
الممسوحة ضوئيا بـ CamScanner

○ $\frac{-1}{\sqrt{5}}$

7. *

(3 Points)

$\int_{-2}^{0}\int_{-x}^{2} f\,dy\,dx +$
$\int_{0}^{4}\int_{\sqrt{x}}^{2} f\,dy\,dx =$

○ $\int_0^2 \int_{-y}^{y^2} f\,dx\,dy$

○ $\int_0^1 \int_{-y}^{y^2} f\,dx\,dy$

○ $\int_0^3 \int_{-y}^{y^2} f\,dx\,dy$

○ $\int_0^4 \int_{-y}^{y^2} f\,dx\,dy$

POWERUNIT

○ $\int_0^5 \int_{-y}^{y^2} f\,dx\,dy$

○ $\int_0^6 \int_{-y}^{y^2} f\,dx\,dy$

8. Using cylindrical coordinates, write the volume of the solid bounded by *

(2 Points)

$z=\sqrt{x^2+y^2}, z=-1$

and $(x+4)^2+y^2=16$

○ $\frac{3\pi}{}$

CamScanner الممسوحة ضوئيا بـ

12

8

6. Find the directional derivative of *
(2 Points)

$f(x,y)=x^2+xe^{xy}$ at the point $A(1,0)$ in the direction from A to $B(0,5)$

- $\frac{-4}{\sqrt{2}}$
- $\frac{-2}{\sqrt{2}}$
- $\frac{3}{\sqrt{37}}$
- $\frac{1}{\sqrt{17}}$
- $\frac{2}{\sqrt{26}}$
- $\frac{-1}{\sqrt{5}}$

POWERUNIT

7. *
(3 Points)

$\int_{-2}^{0}\int_{-x}^{2} f\,dydx + \int_{0}^{4}\int_{\sqrt{x}}^{2} f\,dydx =$

أب، الساعة ١٠:٥١ ص

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الممسوحة ضوئيا بـ CamScanner

$\int_{-2}\int_{x^2}(x^2+y^2+6)dydx$

○ $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+6)dydx$

5. *
(2 Points)

Along the path
$y=x^2+1$ find

$\lim_{(x,y)\to(0,1)} \frac{-4x^2-y+1}{\cos x+y-x^2-2}$

○ −4

○ −8

○ −6

○ 10

POWEROUNIT

○ 12

○ 8

6. Find the directional derivative of *
(2 Points)

$f(x,y)=x^2+xe^{y}$ at the
point $A(1,0)$ in the direction
from A to $B(0,5)$

○ $\frac{-4}{\sqrt{2}}$

أب، الساعة ١٠:٥١ ص

تعليق

الممسوحة ضوئيا بـ CamScanner

1. *

(2 Points)

$\int_0^5 \int_{-\sqrt{10y-y^2}}^{-y} f(x,y)\,dx\,dy=$

- $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{6\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{8\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{4\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{12\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{10\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$
- $\int_{\frac{3\pi}{4}}^{\pi} \int_0^{2\sin\theta} f(r\cos\theta, r\sin\theta)\,r\,dr\,d\theta$

POWERUNIT

2. Find symmetric equations of the normal line to the surface: *

(2 Points)

$z = x(1 + e^{xy})$ at the point $(2, 0, 4)$

- $\frac{x-2}{2} = \frac{y}{4} = \frac{z-4}{-1}$
- $\frac{x+3}{2} = \frac{y}{9} = \frac{z+6}{-1}$
- $\frac{x-3}{2} = \frac{y}{9} = \frac{z-6}{-1}$

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$-\frac{\quad}{4}$

4. Using double integrals, write the volume of the solid bounded by: *

(2 Points)

$z=x^2+y^2+4, z=-4,$

$y=x^2$ and $y=2-x$

- $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+10)dydx$
- $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+12)dydx$
- $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+2)dydx$
- $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+8)dydx$
- $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+4)dydx$
- $\int_{-2}^{1}\int_{x^2}^{2-x}(x^2+y^2+6)dydx$

POWERUNIT

5. *

(2 Points)

Along the path

$y=x^2+1$ find

$$\lim_{(x,y)\to(0,1)} \frac{-4x^2-y+1}{\cos x+y-x^2-2}$$

- -4
- -8

أب، الساعة ١٠:٥١ ص

تعليق أعجبني

CamScanner الممسوحة ضوئيا بـ

2. Find symmetric equations of the normal line t the surface: *
(2 Points)

$z = x(1 + e^{xy})$ at the point $(2, 0, 4)$

- $\frac{x-2}{2} = \frac{y}{4} = \frac{z-4}{-1}$
- $\frac{x+3}{2} = \frac{y}{9} = \frac{z+6}{-1}$
- $\frac{x-3}{2} = \frac{y}{9} = \frac{z-6}{-1}$
- $\frac{x+1}{2} = y = \frac{z+2}{-1}$
- $\frac{x+2}{2} = \frac{y}{4} = \frac{z+4}{-1}$
- $\frac{x-1}{2} = y = \frac{z-2}{-1}$

POWEROUNIT

3. *
(2 Points)

$\int_{-4}^{1} \int_{0}^{\sqrt{24+2x-x^2}} -1 dydx =$

- $-\frac{97}{4}$

١٨ آب، الساعة ١٠:٥١ ص
تعليق أعجبني
الممسوحة ضوئيا بـ CamScanner

12. Let E be the solid enclosed by *

(3 Points)

$z=1-x+y, z=1-x,$

$y=2-x$ and the yz-plane.

Then $\iiint_E \frac{2}{(2-x)^2}\,dV=$

- 4
- 3
- 1
- 6
- 5
- 2

POWERUNIT

13. *

(2 Points)

$\int_0^1 \int_{5y}^{5} e^{2x^2 y}\,dx\,dy =$

- $\frac{e^{98}-1}{28}$
- $\frac{e^{50}-1}{20}$
- $\frac{e^{32}-1}{16}$

CamScanner الممسوحة ضوئيا بـ

- ○ 2y+2z=0

10. *
(2 Points)

$\vec{a}=(1,1,1), \vec{b}=(-1,0,1)$

$\frac{|\vec{a}\cdot\vec{b}-\vec{a}|}{\vec{a}\,\vec{b}-2} =$

- ○ 3
- ○ $-\frac{3}{2}$
- ○ 1
- ○ -1
- ○ -3
- ○ $\frac{3}{2}$

POWERUNIT

11. *
(2 Points)

$|\vec{a}-\vec{b}|=\sqrt{13}, |\vec{a}-2\vec{b}|=\sqrt{35}$

and $|\vec{a}|=\sqrt{3}$. The angle

between $\vec{a}$ and $\vec{b}$ is

- ○ 121.5
- ○ 1[illegible]

Seham Sawa
أمس الساعة ١٠:٥١ ص
تعليق
أعجبني

الممسوحة ضوئيا بـ CamScanner

8. Using cylindrical coordinates, write the volume of the solid bounded by *

(2 Points)

$z=\sqrt{x^2+y^2}, z=-1$

and $(x+4)^2+y^2=16$

- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-8\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-10\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-2\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-12\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-4\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
- $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-6\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$

POWEROUNIT

9. Find the equation of the plane passing through the points *

(3 Points)

A(0,0,0), B(0,1,2) and parallel

أب، الساعة ١٠:٥١ ص

الممسوحة ضوئيا بـ CamScanner

○ 2y+2z=0

10. *

(2 Points)

$\vec{a}=(1,1,1), \vec{b}=(-1,0,1)$

$\dfrac{\left|\vec{a}\cdot\vec{b}-\vec{a}\right|}{\vec{a}\cdot\vec{b}-2}=$

○ 3

○ $-\frac{3}{2}$

○ 1

○ -1

○ -3

○ $\frac{3}{2}$

POWERUNIT

11. *

(2 Points)

$\left|\vec{a}-\vec{b}\right|=\sqrt{13}, \left|\vec{a}-2\vec{b}\right|=\sqrt{35}$

and $\left|\vec{a}\right|=\sqrt{3}$. The angle

between $\vec{a}$ and $\vec{b}$ is

○ 121.5

○ 1[illegible]8.1

أمس الساعة ١٠:٥١ ص

تعليق أعجبني

الممسوحة ضوئيا بـ CamScanner

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- ○ $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-10\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
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- ○ $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-12\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$

POWERUNIT

- ○ $\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \int_0^{-4\cos\theta} \int_{-1}^{r} r\,dz\,dr\,d\theta$
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أب، الساعة ١٠:٥١ ص

الممسوحة ضوئيا بـ CamScanner