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Question 1

Not yet answered

Marked out of 6.00

v1 (latest)

Calculate the volume of a regular (right) hexagonal pyramid whose base edge length is 3 cm and lateral edge length is 6 cm.

Select one:

- a. None of the remaining possibilities is correct.
- b. $V = 243\, cm^3$
- c. $V = 81\, cm^3$
- d. $V = 121.5\, cm^3$
- e. $V = 40.5\, cm^3$

Question 2

Not yet answered

Marked out of 6.00

v1 (latest)

Which of the following statements regarding the domain of the function $f(x) = \sqrt{\frac{x-2}{x^2-x-0{,}75}}$ is correct?

Select one:

- a. The domain is $[-\frac{1}{2}, \frac{3}{2}]$.
- b. The domain is represented by all positive real numbers.
- c. None of the remaining possibilities is correct.
- d. The domain is $(-\infty, -\frac{1}{2}) \cup (\frac{3}{2}, 2]$.
- e. The domain is $(-\frac{1}{2}, \frac{3}{2}) \cup [2, +\infty)$.

Question 3

Not yet answered

Marked out of 7.00

v1 (latest)

Calculate the power $(1+i)^6$.

Select one:

- a. $-8i$
- b. $8i$
- c. $8-8i$
- d. -8
- e. None of the remaining possibilities is correct.

Question 4

Not yet answered

Marked out of 6.00

v1 (latest)

Find all real solutions of the equation $x(x-1) = 2(x+2) - x(x+4)$.

Select one:

- a. The equation has no real solutions.
- b. $x_{1,2} = \frac{1}{2}(1 \pm \sqrt{33})$
- c. $x_1 = -0.5, x_2 = 0.25$
- d. None of the remaining possibilities is true.
- e. $x_{1,2} = (-1 \pm \sqrt{33})/4$

Question 5

Not yet answered

Marked out of 6.00

v1 (latest)

Express the following proper fraction with repeating infinite decimal expansion $1.2\overline{31}$ as a fraction of two integers.

Select one:

- a. $\frac{111}{99}$
- b. $\frac{1219}{999}$
- c. None of the remaining possibilities is correct.
- d. $\frac{111}{90}$
- e. $\frac{1219}{990}$

Question 6

Not yet answered

Marked out of 8.00

v1 (latest)

Determine the value of real parameter p in such a way that the equation $\sqrt{x^2 + 2p} = p + x$ has just one real solution:

Select one:

- a. None of the remaining possibilities is correct.
- b. $p \in [-2, \infty)$
- c. $p \neq 0$
- d. $p \in [-2, 0) \cup (0, \infty)$
- e. There is no such value of parameter p.

Question 7

Not yet answered

Marked out of 7.00

v1 (latest)

For a geometric sequence with common ratio $q = 3$ determine how many of its members sum up to 242, provided that the last addend is 162.

Select one:

- a. 6
- b. 4
- c. 7
- d. None of the remaining possibilities is correct.
- e. 5

Question 8

Not yet answered

Marked out of 7.00

v1 (latest)

Determine negation of the proposition: "*A number is divisible by four if and only if the number represented by its least two digits is divisible by four.*"

Select one:

- a. A number is divisible by four and the number represented by its least two digits is not divisible by four, or the number is not divisible by four and the number represented by its least two digits is divisible by four.
- b. A number is divisible by four if and only if the number represented by its least two digits is not divisible by four.
- c. A number is not divisible by four and the number represented by its least two digits is not divisible by four.
- d. None of the remaining possibilities is correct.
- e. A number is not divisible by four if and only if the number represented by its least two digits is not divisible by four.

Question 9

Not yet answered

Marked out of 8.00

v1 (latest)

Find the solution of the equation $3^{x+2} \cdot 4^{-(x+3)} + 3^{x+4} \cdot 4^{-(x+3)} = \frac{40}{9}$ and decide which of the statements is correct.

Select one:

- a. The equation has exactly one negative solution.
- b. $x = 0$
- c. The equation has exactly one positive solution.
- d. None of the remaining possibilities is correct.
- e. The equation has no solution.

Question 10

Not yet answered

Marked out of 7.00

v1 (latest)

Find the absolute term of the binomial expansion $\left(2x + \frac{3}{\sqrt{x}}\right)^6$.

Select one:

- a. None of the remaining possibilities is correct.
- b. 144
- c. 324
- d. 4860
- e. 2160

Question 11

Not yet answered

Marked out of 6.00

v1 (latest)

Positive number x is by 20% smaller than another positive number y. By how much is y greater then x?

Select one:

- a. None of the remaining possibilities is correct.
- b. Number y is by 25 % greater than number x.
- c. Number y is by approx. 33 % greater than number x.
- d. Number y is by 15 % greater than number x.
- e. Number y is by 20 % greater than number x.

Question 12

Not yet answered

Marked out of 7.00

v1 (latest)

Given the function $f(x) = 2x + 1 + x^2$, calculate the difference $2f(t+1) - f(t-1)$.

Select one:

- a. $t^2 + 2t + 7$
- b. $t^2 + 8t + 8$
- c. $2t^2 + 2t + 9$
- d. None of the remaining possibilities is correct.
- e. $3t^2 + 4t + 12$

Question 13

Not yet answered

Marked out of 6.00

v1 (latest)

A cyclist rode into the city 62 kms away. He started 10 minutes later than he had planned and his average riding speed was by 0,5 km/h slower than he had originally expected. He arrived 18 minutes later than planned. Decide which of the statements is correct.

Select one:

- a. He made the route in 4 hours and 8 minutes.
- b. None of the remaining possibilities is correct.
- c. He planned to make the route in 3 hours and 58 minutes.
- d. His actual speed was 15.5 km/h.
- e. He planned to ride at a speed of 15 km/h.

Question 14

Not yet answered

Marked out of 7.00

v1 (latest)

Determine all possible values of the decimal digit D so that the decimal number $3D2$ be divisible by 9.

Select one:

- a. $D = 4,\ 9$
- b. None of the remaining possibilities is correct.
- c. Such D does not exist.
- d. $D = 4$
- e. $D = 1,\ 4,\ 7$

Question 15

Not yet answered

Marked out of 6.00

v1 (latest)

Determine the square root of the result of division of a number x by its reciprocal value.

Select one:

- a. $\pm x$
- b. x
- c. $|x|$
- d. 1
- e. None of the remaining results is correct.