Started on	Friday, 18 November 2022, 10:59 PM
State	Finished
Completed on	Friday, 18 November 2022, 10:59 PM
Time taken	24 secs
Grade	**0.00** out of 100.00

Question **1**

Not answered

Marked out of 11.00

Find all real soultions of the system of equations: $2x+y=1$ and $x^2-2y^2=2xy$.

Select one:

a. The system has no real soultions.

b. All solutions are: $x=2, y=3$.

c. All solutions are: $x_1=1+\frac{1}{\sqrt{3}}, y_1=-1-\frac{2}{\sqrt{3}}$ and $x_2=1-\frac{1}{\sqrt{3}}, y_2=-1+\frac{2}{\sqrt{3}}$.

d. All solutions are: $x_1=1+\frac{1}{\sqrt{3}}, y_1=-1+\frac{2}{\sqrt{3}}$ and $x_2=1-\frac{1}{\sqrt{3}}, y_2=-1-\frac{2}{\sqrt{3}}$.

e. None of the remaining possibilities is correct.

The correct answer is: All solutions are: $x_1=1+\frac{1}{\sqrt{3}}, y_1=-1-\frac{2}{\sqrt{3}}$ and $x_2=1-\frac{1}{\sqrt{3}}, y_2=-1+\frac{2}{\sqrt{3}}$.

Question **2**

Not answered

Marked out of 12.00

Find all solutions of the equation $2\sin^2 x+\cos^2 x+\sin x\cos x=1$ located in the interval $\langle 0, 2\pi)$.

Select one:

a. $x=0, \pi, \pi/4, 3\pi/4$

b. $x=\pi/4, 7\pi/4$

c. $x=0, \pi, 3\pi/4, 7\pi/4$

d. $x=7\pi/4, 3\pi/4$

e. None of the remaining possibilities is correct.

The correct answer is: $x=0, \pi, 3\pi/4, 7\pi/4$

Question **3**

Not answered

Marked out of 10.00

Consider a two-digit decimal number whose two digits added together give 5. If we swap the two digits and from this number we subtract the original one, we obtain 9. Determine the original number.

Select one:

- a. 32
- b. 67
- c. None of the remaining possibilities is correct.
- d. 76
- e. 23

The correct answer is: 23

Question **4**

Not answered

Marked out of 11.00

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

Select one:

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

The correct answer is: $-8i$

Question **5**

Not answered

Marked out of 12.00

Determine the value of parameters a, b, c in such a way that the equality $(2a-3x)(bx+3) = 9x^2 + 2cx + 2$ is valid for all real x and decide which of the statements is true.

Select one:

- a. $a = 3, b = -3, c = \frac{11}{2}$
- b. None of the remaining possibilities is correct.
- c. The product of all parameters is $\frac{11}{2}$.
- d. Such parameters do not exist.
- e. There are more than one triple of parameters satisfying the conditions.

The correct answer is: The product of all parameters is $\frac{11}{2}$.

Question **6**

Not answered

Marked out of 11.00

Find all real solutions of the inequation $2^{x+1} + \frac{1}{2}4^{x+1} > 3 - 3 \cdot 2^x$.

Select one:

a. $x > -1$

b. $x \in (-3, \frac{1}{2})$

c. $x \in (-1, \log_2 3)$

d. $x < -1$

e. None of the remaining possibilities is correct.

The correct answer is: $x > -1$

Question **7**

Not answered

Marked out of 12.00

I bought 1.5 kg tangerines and 3.5 kg oranges and paid $18.50. The price of oranges is one third more than the price of tangerines. Decide which statement is true.

Select one:

a. None of the remaining possibilities is correct.

b. For 1 kg of oranges and 0.5 kg tangerines we would pay $5.

c. 1 kg tangerines and half a kilo oranges would cost $5.

d. 2 kg of tangerines cost the same as 1.25 kg oranges.

e. Oranges cost by $1.50 more per 1kg than tangerines.

The correct answer is: 1 kg tangerines and half a kilo oranges would cost $5.

Question **8**

Not answered

Marked out of 11.00

In how many ways can we select 4 candies out of 10 chocolate candies, 5 nutty candies and 15 vanilla candies? Candies of the same kind are considered identical.

Select one:

a. 18

b. 15

c. None of the remaining possibilities is correct.

d. 360

e. 435

The correct answer is: 15

Question **9**

Not answered

Marked out of 10.00

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. $D = 1,\ 4,\ 7$

c. Such D does not exist.

d. $D = 4$

e. None of the remaining possibilities is correct.

The correct answer is: $D = 4$

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