Started on	Tuesday, 31 October 2023, 7:56 PM
State	Finished
Completed on	Wednesday, 1 November 2023, 8:45 AM
Time taken	12 hours 48 mins
Overdue	11 hours 58 mins
Grade	**0.00** out of 100.00

Question 1

Not answered

Marked out of 11.00

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

The correct answer is: 5

Question 2

Not answered

Marked out of 12.00

A swimming pool administration keeps monthly visitors statistics. One quarter of visitors comes for swimming at least twice a week and one fifth of them comes even every day. One fifth of visitors comes once a week. The rest are irregular visitors who come once a month or so. Every tenth visitor never returns after the first visit. Decide which of the statements is correct.

Select one:

- a. There are 65% of irregular visitors.
- b. At least 45% of visitors come on a regular basis.
- c. 5% of visitors come exactly twice a week.
- d. None of the remaining possibilities is correct.
- e. There are 65% of regular visitors.

The correct answer is: At least 45% of visitors come on a regular basis.

Question 3

Not answered

Marked out of 12.00

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

Select one:

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

The correct answer is: $|x|$

Question 4

Not answered

Marked out of 10.00

Assuming the function defined by $f(x) = \sqrt{x+1}$, express the function value for argument x^2.

Select one:

- a. $f(x^2) = \sqrt{x^2+2x+1}$
- b. $f(x^2) = |x+1|$
- c. None of the remaining possibilities is correct.
- d. $f(x^2) = x+1$
- e. $f(x^2) = \sqrt{x^2+1}$

The correct answer is: $f(x^2) = \sqrt{x^2+1}$

Question 5

Not answered

Marked out of 10.00

Find the range of the function $f(x) = 3 - 2\cos(2x-1)$.

Select one:

- a. The range is $[1, 5]$.
- b. None of the remaining possibilities is correct.
- c. The range is $[-\frac{3}{2}, \frac{5}{2}]$.
- d. The range is $[-1, 3]$.
- e. The range is $[-1, 1]$.

The correct answer is: The range is $[1, 5]$.

Question 6

Not answered

Marked out of 11.00

For the following two sets $A = \{x^2 - 4x + 5 \mid x \in (1, 4]\}$ and $B = \{x \mid |x - 4| > \frac{1}{2}\}$ determine the intersection $A \cap B$.

Select one:

- a. $\langle 1, \frac{7}{2}) \cup (\frac{9}{2}, 5\rangle$
- b. All real numbers.
- c. $(2, \frac{7}{2}) \cup (\frac{9}{2}, 5\rangle$
- d. None of the remaining possibilities is correct.
- e. $(\frac{7}{2}, \frac{9}{2})$

The correct answer is: $\langle 1, \frac{7}{2}) \cup (\frac{9}{2}, 5\rangle$

Question 7

Not answered

Marked out of 12.00

Assume we create randomly a 3-digit number using only digits from 0, 1, 2, 3, 6 with no repetitions permitted. What is the probability that the corresponding number is divisible by 2?

Select one:

- a. $\frac{5}{12}$
- b. $\frac{5}{8}$
- c. $\frac{9}{16}$
- d. $\frac{11}{24}$
- e. None of the remaining possibilities is correct.

The correct answer is: $\frac{5}{8}$

Question 8

Not answered

Marked out of 11.00

Decide which of the statements regarding the solution of the equation $9^{x-\frac{1}{2}} + 9^{\frac{1}{2}-x} = \frac{10}{3}$ is correct.

Select one:

- a. None of the remaining possibilities is correct.
- b. The product of all solutions is 9.
- c. The equation has no solution.
- d. The equation has two non-negative solutions.
- e. The sum of all solutions is -1.

The correct answer is: The equation has two non-negative solutions.

Question 9

Not answered

Marked out of 11.00

Find all real solutions of the equation $\sqrt{x^2+2x-8}=\sqrt{2x+3}$.

Select one:

a. $x=2, x=-4$

b. $x=\pm\sqrt{11}$

c. $x=\sqrt{11}$

d. None of the remaining possibilities is true.

e. The equation has no real solutions.

The correct answer is: $x=\sqrt{11}$