Question 1

Not yet answered

Marked out of 11.00

Determine which of the following is equivalent to the proposition: "*If the sun shines, then we shall go on a trip.*"

Select one:

- a.   If we go on a trip, then the sun will shine.
- b.   If we do not go on a trip, then the sun will not shine.
- c.   The sun will shine and we shall not go on a trip.
- d.   None of the remaining possibilities is correct.
- e.   If the sun does not shine, then we shall not go on a trip.

Question 2

Not yet 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. $f(x^2) = x + 1$
- b. $f(x^2) = \sqrt{x^2 + 1}$
- c. $f(x^2) = |x + 1|$
- d. $f(x^2) = \sqrt{x^2 + 2x + 1}$
- e.   None of the remaining possibilities is correct.

Question 3

Not yet answered

Marked out of 12.00

We roll two times a (standard hexagonal) dice. What is the probability that we get exactly one six?

Select one:

- a. $\frac{2}{5}$
- b. $\frac{1}{3}$
- c.   None of the remaining possibilities is correct.
- d. $\frac{11}{36}$
- e. $\frac{5}{18}$

Question 4

Not yet answered

Marked out of 12.00

Simplify the expression: $2\sqrt{108} - 2\sqrt{27} + 12\sqrt{12}$.

Select one:

○ a. $42\sqrt{3}$

○ b. None of the remaining possibilities is correct.

○ c. $150\sqrt{3}$

○ d. $30\sqrt{3}$

○ e. $18\sqrt{3}$

Question 5

Not yet answered

Marked out of 10.00

Find the intersections of the graph of the function $f(x) = x^2 + 2x - 3$ with the coordinate axes.

Select one:

○ a. $[0, -3], [-2, 0]$

○ b. $[0, -3], [-3, 0], [1, 0]$

○ c. None of the remaining possibilities is correct.

○ d. $[0, -3], [3, 0], [-1, 0]$

○ e. $[-3, 0], [0, -3], [0, 1]$

Question 6

Not yet answered

Marked out of 11.00

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

Select one:

○ a. None of the remaining possibilities is correct.

○ b. $x = 0, \pi, \pi/4, 3\pi/4$

○ c. $x = \pi/4, 7\pi/4$

○ d. $x = 7\pi/4, 3\pi/4$

○ e. $x = 0, \pi, 3\pi/4, 7\pi/4$

Question 7

Not yet answered

Marked out of 12.00

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 approx. 33 % greater than number x.
- c.   Number y is by 25 % greater than number x.
- d.   Number y is by 20 % greater than number x.
- e.   Number y is by 15 % greater than number x.

Question 8

Not yet answered

Marked out of 11.00

Calculate the sum of the series $6 + 3 + \frac{3}{2} + \frac{3}{4} + \frac{3}{8} + \ldots$

Select one:

- a.   15
- b.   None of the remaining possibilities is correct.
- c.   12
- d. ∞
- e.   6

Question 9

Not yet answered

Marked out of 11.00

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

Select one:

- a. $x = \pm\sqrt{11}$
- b.   The equation has no real solutions.
- c. $x = \sqrt{11}$
- d. $x = 2, x = -4$
- e.   None of the remaining possibilities is true.