

Answer on Question #56100 –Math – Algebra

16: Which of the following are solutions to the following equation?

$$4x^2 - 100 = 0$$

check all that apply 5 -10 -5 10

Solution

$$4x^2 - 100 = 0$$

$$4x^2 = 100$$

$$x^2 = 25$$

$$x_1 = 5, x_2 = -5$$

Answer: 5; -5.

17: The value of 1 is a solution for $x^2 - 6x + 5 = 0$

A: True

B: False

Solution

$$x^2 - 6x + 5 = 0$$

if $x=1$ then $x^2 - 6x + 5 = 1^2 - 6 \cdot 1 + 5 = 0$, so the value of 1 is a solution for equation

Answer: A: True

18: What is the value of the discriminant in the equation shown below?

$$X^2 - 6x + 4 = 0$$

Solution

The discriminant is $D = b^2 - 4ac = 6^2 - 4 \cdot 1 \cdot 4 = 36 - 16 = 20$

Answer: ___20___

19: Describe the roots of the equation shown below.

$$3x^2 - 10x - 5 = 0$$

A: There are two real, irrational roots.

B: There are two real, rational roots.

C: There is one real, double root.

D: There are two complex roots.

Solution: $D = b^2 - 4ac = 10^2 - 4 \cdot 3 \cdot (-5) = 100 + 60 = 160$

$$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a} = \frac{10 \pm \sqrt{160}}{6} = \frac{10 \pm 4\sqrt{10}}{6} = \frac{5 \pm 2\sqrt{10}}{3}$$

Answer: A: There are two real, irrational roots.

20: A ball is thrown vertically upward with an initial velocity of 5 ft per second from a height of 2 feet. Which function models its motion?

$$A: y = 16t^2 - 2t - 5$$

$$B: y = -16t^2 - 5t - 2$$

$$C: y = -16t^2 + 5t + 2$$

$$D: y = -16t^2 + 2t + 5$$

Solution: The function which models the ball's motion is

$$y = h_0 + V_0t - gt^2/2$$

from the task: $h_0 = 2$, $V_0 = 5$, $g/2 \sim 16$

Answer: C: $y = -16t^2 + 5t + 2$