**1.**

$$x^2 - 10x + 25 = 0$$

What value of $x$ satisfies the given equation?

A) $-10$

B) $-5$

C) $5$

D) $10$

**2.**

If $y = x^2 + ax + a$, where $a$ is a constant, and $y = 11$ when $x = 1$, what is the value of $a$?

A) $-5$

B) $-2$

C) $2$

D) $5$

**3.**

$$x^2 - 10x - 9 = -25$$

The solutions of the equation above are $t$ and $u$. If $t > u$, what is the value of $t - u$ ?

A) 4

B) 6

C) 8

D) 10

**4.**

$$20x^2 - 13x + 2 = 0$$

What is one value of $x$ that satisfies the equation above?

**5.**

If $t^2 - 7t = 18$ and $t > 0$, what is the value of $t$ ?

A) 9

B) 8

C) 5

D) 2

**6.**

$$x(x+2) = 8$$

Which of the following lists all solutions to the quadratic equation above?

A) 8 and 6

B) 4 and $-2$

C) $-4$ and 2

D) $\sqrt{6}$

**7.**

$$x^2 - 12x + 35 = 0$$

What is the sum of the solutions to the given equation?

A) $-35$

B) $-12$

C) 12

D) 35

**8.**

$$x^2 - 14x + 40 = 2x + 1$$

What is the sum of the solutions to the given equation?

**9.**

$$4x^2 + 3x - 1 = 0$$

What are the solutions to the equation above?

A) $x = \frac{-3 \pm 5}{8}$

B) $x = \frac{3 \pm 5}{8}$

C) $x = \frac{-3 \pm 5}{4}$

D) $x = \frac{-3 \pm \sqrt{13}}{8}$

**10.**

How many real solutions does the equation $(x - 3)(x^2 - 5x + 8) = 0$ have?

A) One

B) Two

C) Three

D) Four

**11.**

Which quadratic equation has exactly one distinct real solution?

A) $x^2 + 2 = 0$

B) $x^2 + x = 0$

C) $x^2 + x + 1 = 0$

D) $x^2 + 2x + 1 = 0$

**12.**

$$x^2 + 3x - 1 = 0$$

Which of the following is a solution to the equation above?

A) $\frac{-3+\sqrt{13}}{2}$

B) $\frac{3-\sqrt{13}}{2}$

C) $\frac{-3+\sqrt{7}}{2}$

D) $\frac{3-\sqrt{7}}{2}$

**13.**

Which of the following is a solution of the equation $x^2 + 2 = 5x$ ?

A) $\frac{-5+\sqrt{21}}{2}$

B) $\frac{-5+\sqrt{17}}{2}$

C) $\frac{5-\sqrt{21}}{2}$

D) $\frac{5-\sqrt{17}}{2}$

**14.**

$$2x^2 - 3x - 4 = 0$$

What is the sum of the two solutions to the equation above?

**15.**

$$x^2 - x - 2 = 0$$

Which of the following are the solutions to the equation above?

A) $x = \frac{1}{4} \pm \sqrt{\frac{1}{2}}$

B) $x = \frac{1}{4} \pm \sqrt{\frac{9}{4}}$

C) $x = \frac{1}{2} \pm \sqrt{\frac{1}{4}}$

D) $x = \frac{1}{2} \pm \sqrt{\frac{9}{4}}$

**16.**

$$20x^2 - 13x + 2 = 0$$

What is one value of $x$ that satisfies the equation above?

**17.**

$$x^2 + 4x - 20 = 0$$

What is a value of $x$ that satisfies the given equation?

A) 2

B) $2 + 2\sqrt{6}$

C) $-2 - 2\sqrt{2}$

D) $-2 + 2\sqrt{6}$

**18.**

$$(x-3)^2 = 81$$

What is the sum of the solutions to the given equation?

A) 0

B) 6

C) 9

D) 12

**19.**

The area of a rectangular rug is 112 square feet. The rug's width $x$, in feet, is 6 feet shorter than its length. Which equation represents this situation?

A) $x^2 - 6x - 112 = 0$

B) $x^2 - 6x + 112 = 0$

C) $x^2 + 6x - 112 = 0$

D) $x^2 + 6x + 112 = 0$

**20.**

If $a^2 - 9a + 14 = 0$, what is one possible value of $a + 3$?

**21.**

$$2x^2 - 22x + 56 = 0$$

If $x = k$ represents a solution to the quadratic equation above, what is one possible value of $k$?

**22.**

$$2x^2 - 3x - 7 = 0$$

If $c$ and $d$ are the two solutions of the quadratic equation above, what is the value of $c + d$?