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

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

- A) -16
- B) -14
- C) 14
- D) 16

14

13

In the xy -plane, the graph of the function

$f(x) = x^2 + 5x + 4$ has two x -intercepts. What is the distance between the x -intercepts?

- A) 1
- B) 2
- C) 3
- D) 4

15

14

$$\sqrt{4x} = x - 3$$

What are all values of x that satisfy the given equation?

- I. 1
- II. 9

- A) I only
- B) II only
- C) I and II
- D) Neither I nor II

16

14

Which of the following is a value of x for which the

expression $\frac{-3}{x^2 + 3x - 10}$ is undefined?

- A) -3
- B) -2
- C) 0
- D) 2

17

14

$$\begin{aligned} y &= x^2 + 3x - 7 \\ y - 5x + 8 &= 0 \end{aligned}$$

How many solutions are there to the system of equations above?

- A) There are exactly 4 solutions.
- B) There are exactly 2 solutions.
- C) There is exactly 1 solution.
- D) There are no solutions.

18

15

$$2x^2 + 5x - 12$$

If the given expression is rewritten in the form $(2x - 3)(x + k)$ where k is a constant, what is the value of k ?

19

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What is the set of all solutions to the equation

$$\sqrt{x+2} = -x$$

- A) $\{-1, 2\}$
- B) $\{-1\}$
- C) $\{2\}$
- D) There are no solutions to the given equation.

20

15

Which of the following is an equivalent form of the expression $(2x-2)^2 - (2x-2)$?

- A) $2x^2 - 6x + 6$
- B) $4x^2 - 10x + 2$
- C) $(2x-2)(2x-2)$
- D) $(2x-3)(2x-2)$

21

16

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

If a is a solution of the equation above and $a > 0$, what is the value of a ?

22

17

$$x^2 + 2x + 1 = 4$$

What is the positive solution to the given equation?

23

17

$$(x-1)^2 = 3x-5$$

What is one possible solution to the equation above?

24

19

$$\sqrt{14-2x} = x-7$$

What value of x satisfies the given equation?

13 D
14 C
15 B

16 D
17 C
18 4

19 B
20 D
21 3

22 1
23 2 or 3
24 7