42 Which of the following expressions is equal to $(x+2)+(x-2)(2x+1)$?

A $2x^2 - 2x$

B $2x^2 - 4x$

C $2x^2 + x$

D $4x^2 + 2x$

CSA10191

43 A volleyball court is shaped like a rectangle. It has a width of x meters and a length of $2x$ meters. Which expression gives the area of the court in square meters?

A $3x$

B $2x^2$

C $3x^2$

D $2x^3$

CSA00496

44 Which is the factored form of $3a^2 - 24ab + 48b^2$?

A $(3a - 8b)(a - 6b)$

B $(3a - 16b)(a - 3b)$

C $3(a - 4b)(a - 4b)$

D $3(a - 8b)(a - 8b)$

CSA00066

45 Which is a factor of $x^2 - 11x + 24$?

A $x + 3$

B $x - 3$

C $x + 4$

D $x - 4$

CSA00503

46 Which of the following shows $9t^2 + 12t + 4$ factored completely?

A $(3t + 2)^2$

B $(3t + 4)(3t + 1)$

C $(9t + 4)(t + 1)$

D $9t^2 + 12t + 4$

CSA20106

47 What is the complete factorization of $32 - 8z^2$?

A $-8(2 + z)(2 - z)$

B $8(2 + z)(2 - z)$

C $-8(2 + z)^2$

D $8(2 - z)^2$

CSA20105

48 If x^2 is added to x, the sum is 42. Which of the following could be the value of x?

A -7

B -6

C 14

D 42

CSA10171

— **15** —

49 What quantity should be added to both sides of this equation to complete the square?

$$x^2 - 8x = 5$$

A   4

B   −4

C   16

D   −16

CSA00478

50 What are the solutions for the quadratic equation $x^2 + 6x = 16$?

A $-2, -8$

B $-2, 8$

C $2, -8$

D $2, 8$

CSA10062

51 Leanne correctly solved the equation $x^2 + 4x = 6$ by completing the square. Which equation is part of her solution?

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

B $(x+2)^2 = 10$

C $(x+4)^2 = 10$

D $(x+4)^2 = 22$

CSA20139

52 Carter is solving this equation by factoring.

$$10x^2 - 25x + 15 = 0$$

Which expression could be one of his correct factors?

A $x + 3$

B $x - 3$

C $2x + 3$

D $2x - 3$

CSA00162

53 Toni is solving this equation by completing the square.

$$ax^2 + bx + c = 0 \text{ (where } a \geq 0)$$

Step 1: $ax^2 + bx = -c$

Step 2: $x^2 + \dfrac{b}{a}x = -\dfrac{c}{a}$

Step 3:   ?

Which should be Step 3 in the solution?

A $x^2 = -\dfrac{c}{b} - \dfrac{b}{a}x$

B $x + \dfrac{b}{a} = -\dfrac{c}{ax}$

C $x^2 + \dfrac{b}{a}x + \dfrac{b}{2a} = -\dfrac{c}{a} + \dfrac{b}{2a}$

D $x^2 + \dfrac{b}{a}x + \left(\dfrac{b}{2a}\right)^2 = -\dfrac{c}{a} + \left(\dfrac{b}{2a}\right)^2$

CSA00072

54 Four steps to derive the quadratic formula are shown below.

$$\text{I} \qquad x^2 + \frac{bx}{a} = \frac{-c}{a}$$

$$\text{II} \qquad \left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$$

$$\text{III} \qquad x = \pm\sqrt{\frac{b^2 - 4ac}{4a^2}} - \frac{b}{2a}$$

$$\text{IV} \qquad x^2 + \frac{bx}{a} + \left(\frac{b}{2a}\right)^2 = \frac{-c}{a} + \left(\frac{b}{2a}\right)^2$$

What is the correct order for these steps?

A   I, IV, II, III

B   I, III, IV, II

C   II, IV, I, III

D   II, III, I, IV

CSA20062

55 Which is one of the solutions to the equation $2x^2 - x - 4 = 0$?

A $\dfrac{1}{4} - \sqrt{33}$

B $-\dfrac{1}{4} + \sqrt{33}$

C $\dfrac{1 + \sqrt{33}}{4}$

D $\dfrac{-1 - \sqrt{33}}{4}$

CSA00314

56 Which statement *best* explains why there is no real solution to the quadratic equation $2x^2 + x + 7 = 0$?

A   The value of $1^2 - 4 \cdot 2 \cdot 7$ is positive.

B   The value of $1^2 - 4 \cdot 2 \cdot 7$ is equal to 0.

C   The value of $1^2 - 4 \cdot 2 \cdot 7$ is negative.

D   The value of $1^2 - 4 \cdot 2 \cdot 7$ is not a perfect square.

CSA10147

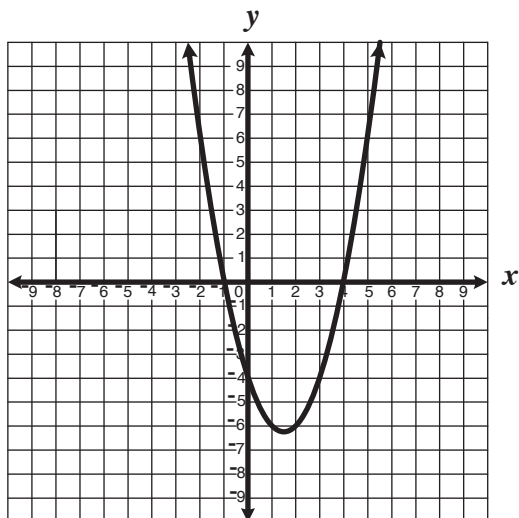**57** What is the solution set of the quadratic equation $8x^2 + 2x + 1 = 0$?

A $\left\{-\dfrac{1}{2}, \dfrac{1}{4}\right\}$

B $\left\{-1 + \sqrt{2}, -1 - \sqrt{2}\right\}$

C $\left\{\dfrac{-1 + \sqrt{7}}{8}, \dfrac{-1 - \sqrt{7}}{8}\right\}$

D   no real solution

CSA10179

58 The graph of the equation $y = x^2 - 3x - 4$ is shown below.

For what value or values of x is $y = 0$?
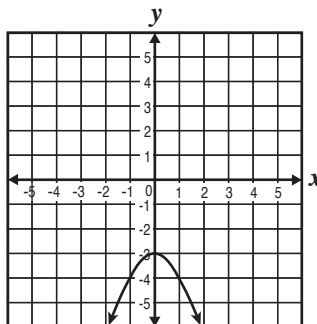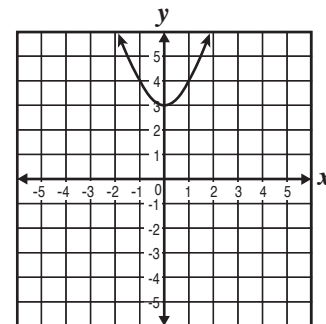
A $\quad x = -1$ only

B $\quad x = -4$ only

C $\quad x = -1$ and $x = 4$

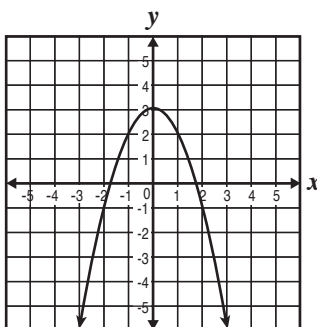D $\quad x = 1$ and $x = -4$

CSA00514

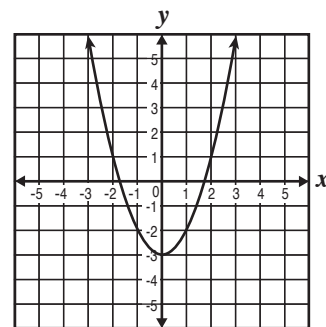**59** Which *best* represents the graph of $y = -x^2 + 3$?

A

C

B

D

CSA00519

60 Which quadratic function, when graphed, has x-intercepts of 4 and -3?

A $\quad y = (x-3)(x+4)$

B $\quad y = (x+3)(2x-8)$

C $\quad y = (3x-1)(4x+1)$

D $\quad y = (3x+1)(8x-2)$

CSA20115