Name_____

math 0320 exam #3   0404700aafm032024350mt3aw

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SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the equation.

1) $x^2 - 7x - 18 = 0$

1) _____

m50-4

2) $2x^2 - 7x - 9 = 0$

2) _____

m50-7

3) $15x^2 - 8x = 0$

3) _____

m50-8

4) $3x^2 + 21x + 36 = 0$

4) _____

m50-10

5) $10x^3 + 70x^2 + 120x = 0$

5) _____

m50-12

6) $9x^3 - 16x = 0$

6) _____

Find the product and simplify.

7) $\dfrac{2y}{4y + 2} \cdot \dfrac{10y + 5}{7}$

7) _____

Find the quotient and simplify.

8) $\dfrac{x^2 - y^2}{x + y} \div \dfrac{x}{x^2 - xy}$

8) _____

Perform the indicated operation. Simplify if possible.

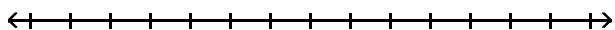9) $\dfrac{x^2 - 8x}{x - 6} + \dfrac{12}{x - 6}$

9) _____

Solve the compound inequality. Graph the solution set.

10) $13 \le 4t + 5 \le 29$

10) _____

$\longleftarrow\!\!+\!\!-\!\!+\!\!-\!\!+\!\!-\!\!+\!\!-\!\!+\!\!-\!\!+\!\!-\!\!+\!\!-\!\!+\!\!-\!\!+\!\!-\!\!+\!\!\longrightarrow$

Solve the absolute value equation.

    11) $|x + 3| = 6$

11) _____

    m50–21

Solve the inequality. Graph the solution set.

    12) $|x + 18| < 9$

12) _____

    m50–22

    13) $|x + 3| > 4$

13) _____

    m50–23

Find the square root. Assume that all variables represent positive real numbers.

    14) $\sqrt{16x^{10}}$

14) _____

    m50–24

Use radical notation to write the expression. Simplify if possible.

    15) $256^{1/4}$

15) _____

    m50–27

Simplify the radical expression. Assume that all variables represent positive real numbers.

16) $\sqrt{320k^7q^8}$

16) _____

m50–29

17) $\sqrt[3]{512x^4y^5}$

17) _____

m50–30

Solve.

18) $\sqrt{x+4} = 8$

18) _____

m50–33

Perform the indicated operation. Write the result in the form a + bi.

19) $\dfrac{8+7i}{9-2i}$

19) _____

m50–37

Use the square root property to solve the equation.

20) $(x-5)^2 = 36$

20) _____

m50–38

4

Use the quadratic formula to solve the equation.

21) $x^2 + 24x + 144 = 0$

21) _____

m50–39

22) $x^2 + 18x + 70 = 0$

22) _____

m50–40

23) $x^2 - 8x + 20 = 0$
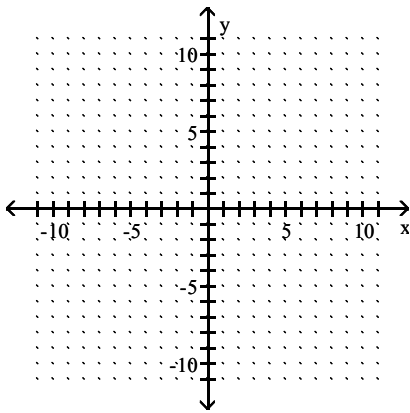
23) _____

m50–41

24) $2x^2 - 7x - 9 = 0$

24) _____

m50-42

Sketch the graph of the quadratic function. Give the vertex and axis of symmetry.

25) $f(x) = x^2 - 4$

25) _____

m50-44

1) 9, – 2

2) $\frac{9}{2}$, –1
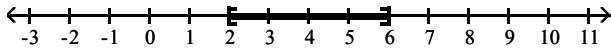
3) $\frac{8}{15}$, 0

4) – 4, – 3

5) 0, –3, –4

6) $\frac{4}{3}$, – $\frac{4}{3}$, 0
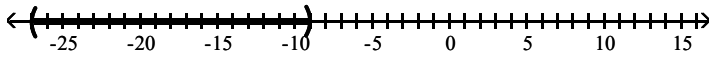
7) $\frac{5y}{7}$
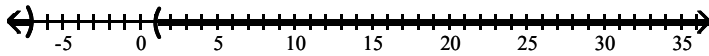
8) $(x - y)^2$

9) $x - 2$

10) [2, 6]

11) –9, 3

12) (–27, –9)

13) $(-\infty, -7) \cup (1, \infty)$

14) $4x^5$

15) 4

16) $8k^3 q^4 \sqrt{5k}$

17) $8xy \sqrt[3]{xy^2}$

18) 60

19) $\frac{58}{85} + \frac{79}{85}i$

20) 11, –1

21) –12

22) $-9 - \sqrt{11}$, $-9 + \sqrt{11}$

23) 4 – 2i, 4 + 2i

24) $\frac{9}{2}$, –1

25) vertex $(0, -4)$; axis $x = 0$