

Name \_\_\_\_\_

math 0320 exam #4 0404700aafm032024350mtf

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

**Solve the equation.**

1)  $x^2 + 2x - 80 = 0$

1) \_\_\_\_\_

M50-3

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

2) \_\_\_\_\_

m50-4

3)  $x^2 - x = 72$

3) \_\_\_\_\_

M50-5

4)  $2x^2 - 7x - 9 = 0$

4) \_\_\_\_\_

m50-7

5)  $15x^2 - 8x = 0$

5) \_\_\_\_\_

m50-8

6)  $3x^2 + 21x + 36 = 0$

6) \_\_\_\_\_

m50-10  
7)  $10x^3 + 70x^2 + 120x = 0$

7) \_\_\_\_\_

m50-12  
8)  $9x^3 - 16x = 0$

8) \_\_\_\_\_

m50-15  
**Find the product and simplify.**

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

9) \_\_\_\_\_

m50-17  
**Find the quotient and simplify.**

10)  $\frac{x^2 - y^2}{x + y} \div \frac{x}{x^2 - xy}$

10) \_\_\_\_\_

m50-18

Perform the indicated operation. Simplify if possible.

11)  $\frac{x^2 - 8x}{x - 6} + \frac{12}{x - 6}$

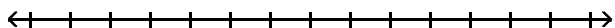
11) \_\_\_\_\_

m50-19

Solve the compound inequality. Graph the solution set.

12)  $13 \leq 4t + 5 \leq 29$

12) \_\_\_\_\_



m50-20

Solve the absolute value equation.

13)  $|x + 3| = 6$

13) \_\_\_\_\_

m50-21

Solve the inequality. Graph the solution set.

14)  $|x + 18| < 9$

14) \_\_\_\_\_

m50-22

15)  $|x + 3| > 4$

15) \_\_\_\_\_

m50-23

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

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

16) \_\_\_\_\_

m50-24

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

17)  $256^{1/4}$

17) \_\_\_\_\_

m50-27

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

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

18) \_\_\_\_\_

m50-29

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

19) \_\_\_\_\_

m50-30

Solve.

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

20) \_\_\_\_\_

m50-33

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

21)  $(6 + 3i) - (-2 + i)$

21) \_\_\_\_\_

22)  $(5 + 3i)(5 - 3i)$

22) \_\_\_\_\_

23)  $\frac{8 + 7i}{9 - 2i}$

23) \_\_\_\_\_

m50-37

Use the square root property to solve the equation.

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

24) \_\_\_\_\_

m50-38

Use the quadratic formula to solve the equation.

25)  $x^2 - 2x - 48 = 0$

25) \_\_\_\_\_

$$26) x^2 + 24x + 144 = 0$$

26) \_\_\_\_\_

m50-39  
27)  $x^2 + 18x + 70 = 0$

27) \_\_\_\_\_

m50-40  
28)  $x^2 - 8x + 20 = 0$

28) \_\_\_\_\_

m50-41  
29)  $2x^2 - 7x - 9 = 0$

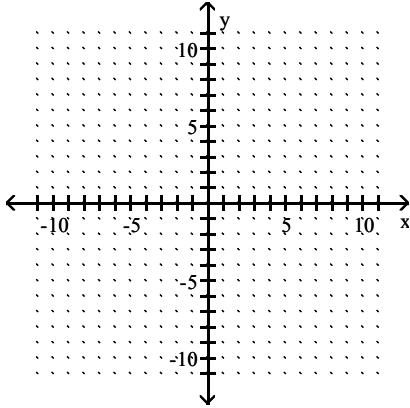
29) \_\_\_\_\_

m50-42

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

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

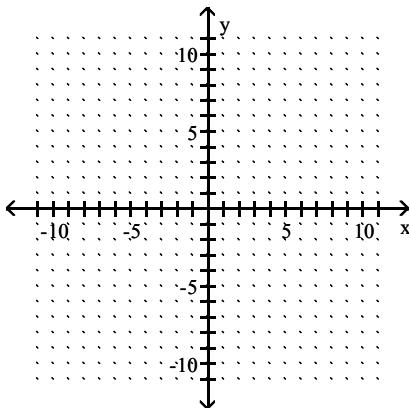
30) \_\_\_\_\_



m50-44

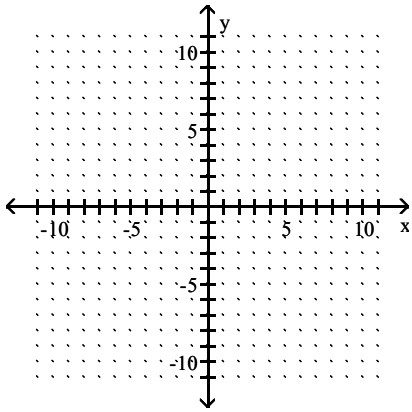
31)  $f(x) = (x + 5)^2$

31) \_\_\_\_\_



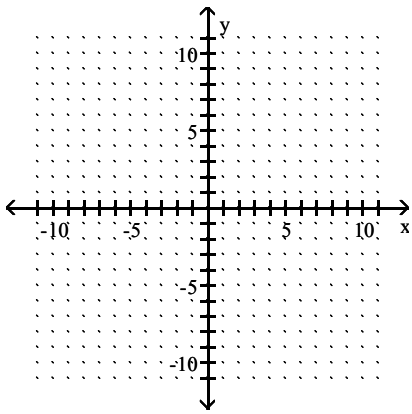
32)  $f(x) = (x - 6)^2 - 3$

32) \_\_\_\_\_



33)  $f(x) = -x^2 - 5$

33) \_\_\_\_\_





Answer Key

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1) -10, 8

2) 9, -2

3) -8, 9

4)  $\frac{9}{2}, -1$

5)  $\frac{8}{15}, 0$

6) -4, -3

7) 0, -3, -4

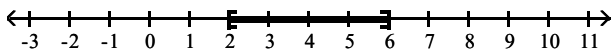
8)  $\frac{4}{3}, -\frac{4}{3}, 0$

9)  $\frac{5y}{7}$

10)  $(x - y)^2$

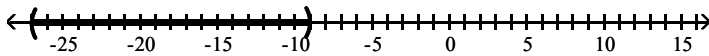
11)  $x - 2$

12) [2, 6]

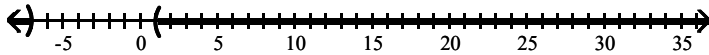


13) -9, 3

14)  $(-27, -9)$



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



16)  $4x^5$

17) 4

18)  $8k^3q^4\sqrt{5k}$

19)  $8xy\sqrt[3]{xy^2}$

20) 60

21)  $8 + 2i$

22)  $34 + 0i$

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

24) 11, -1

25) -6, 8

26) -12

27)  $-9 - \sqrt{11}, -9 + \sqrt{11}$

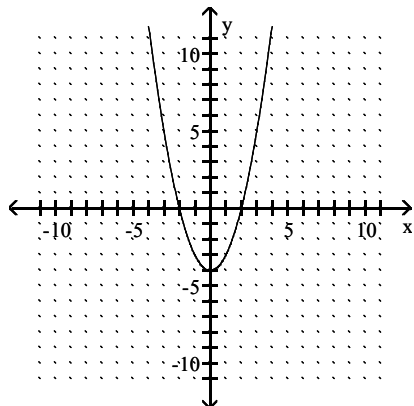
28)  $4 - 2i, 4 + 2i$

29)  $\frac{9}{2}, -1$

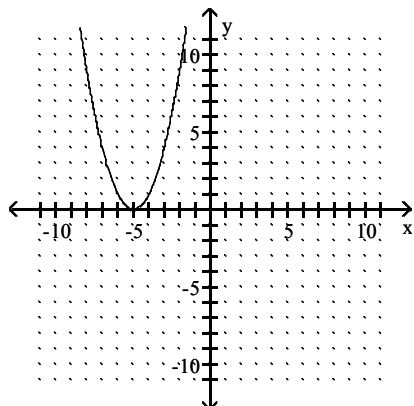
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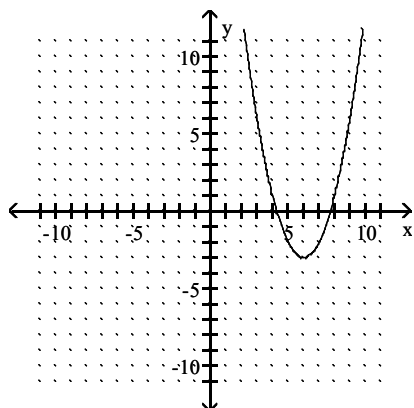
30) vertex  $(0, -4)$ ; axis  $x = 0$



31) vertex  $(-5, 0)$ ; axis  $x = -5$



32) vertex  $(6, -3)$ ; axis  $x = 6$



Answer Key

Testname: AAFM032024350MT4AW

33) vertex  $(0, -5)$ ; axis  $x = 0$

