Exam #4 33 QUESTIONS

Name_____

math 0320 exam #4 0404700aafm032024350mtf

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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve the equation.

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

A) –10, 8 B) 10, 8 C) –10, 1 D) 10, –8

Objective: (13.6) Solve quadratic equations by factoring.
M50–3

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

A) 9, – 2 B) –9, 2 C) –9, – 2 D) –18, 0

Objective: (13.6) Solve quadratic equations by factoring.
m50–4

3) $x^2 - x = 72$ 3) _____

A) –8, 9 B) 8, 9 C) 1, 72 D) –8, –9

Objective: (13.6) Solve quadratic equations by factoring.
M50–5

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

A) $\frac{9}{2}$, –1 B) $\frac{2}{9}$, –1 C) $\frac{2}{9}$, 1 D) $\frac{2}{9}$, 0

Objective: (13.6) Solve quadratic equations by factoring.
m50–7

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

A) $\frac{8}{15}$, 0 B) $\frac{15}{8}$, 0 C) $-\frac{8}{15}$, 0 D) $-\frac{15}{8}$, 0

Objective: (13.6) Solve quadratic equations by factoring.
m50–8

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

A) – 4, – 3 B) $-\frac{1}{2}, \frac{1}{2}$ C) 3, 4 D) 7, 8

Objective: (13.6) Solve quadratic equations by factoring.
m50–10

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

A) 0, –3, –4 B) –3, –4 C) 0, 3, 4 D) $-\frac{1}{3}$, –4

Objective: (13.6) Solve equations with degree greater than 2 by factoring.
m50–12

8) $9x^3 - 16x = 0$ 8) _____

A) $\frac{4}{3}, -\frac{4}{3}, 0$ B) $\frac{4}{3}$ C) $-\frac{4}{3}$ D) $\frac{4}{3}, -\frac{4}{3}$

Objective: (13.6) Solve equations with degree greater than 2 by factoring.
m50–15

Find the product and simplify.

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

A) $\frac{5y}{7}$ B) $\frac{5}{7}$ C) $\frac{5y}{14}$ D) $\frac{y}{7}$

Objective: (14.2) Multiply rational expressions.
m50–17

Find the quotient and simplify.

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

A) $(x - y)^2$ B) $(x + y)$ C) $(x + y)^2$ D) $(x - y)(x + y)$

Objective: (14.2) Divide rational expressions.
m50–18

Perform the indicated operation. Simplify if possible.

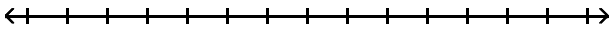
11) $\frac{x^2 - 8x}{x - 6} + \frac{12}{x - 6}$ 11) _____

A) $x - 2$ B) $x + 6$ C) $x + 2$ D) $x - 6$

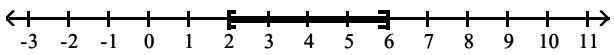
Objective: (14.3) Add and subtract rational expressions with the same denominator.
m50–19

Solve the compound inequality. Graph the solution set.

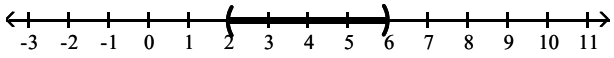
12) $13 \le 4t + 5 \le 29$ 12) _____



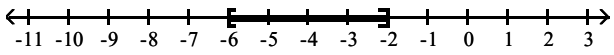
A) [2, 6]



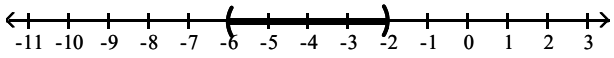
B) (2, 6)



C) [–6, –2]



D) (–6, –2)



Objective: (16.1) Solve compound inequalities containing "and."
m50–20

Solve the absolute value equation.

13) $|x + 3| = 6$ 13) _____

A) –9, 3 B) 9, 3 C) –3 D) ∅

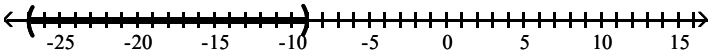
Objective: (16.2) Solve absolute value equations.

m50–21

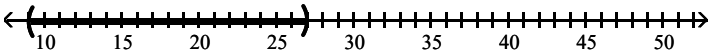
Solve the inequality. Graph the solution set.

14) $|x + 18| < 9$ 14) _____

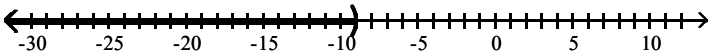
A) (–27, –9)



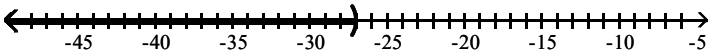
B) (9, 27)



C) (–∞, –9)



D) (–∞, –27)

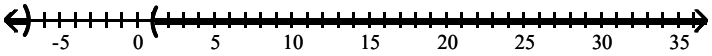


Objective: (16.3) Solve absolute value inequalities of the form $|X| < a$.

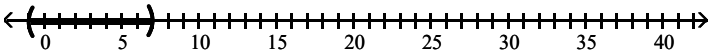
m50–22

15) $|x + 3| > 4$ 15) _____

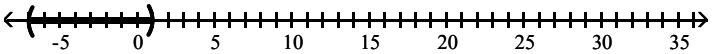
A) (–∞, –7) ∪ (1, ∞)



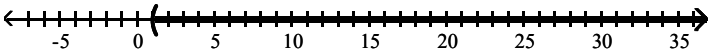
B) (–1, 7)



C) (–7, 1)



D) (1, ∞)



Objective: (16.3) Solve absolute value inequalities of the form $|X| > a$.

m50–23

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

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

A) $4x^5$ B) $4x^{10}$ C) $16x^5$ D) $4x^2$

Objective: (17.1) Find square roots.

m50–24

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

17) $256^{1/4}$ 17) _____

A) 4 B) 16 C) 64 D) 1024

Objective: (17.2) Understand the meaning of a^(1/n).
m50–27

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

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

A) $8k^3q^4\sqrt{5k}$ B) $8k^7q^8\sqrt{5k}$ C) $8k^3q^4\sqrt{5}$ D) $8q^4\sqrt{5k^7}$

Objective: (17.3) Simplify radicals.
m50–29

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

A) $8xy\sqrt[3]{xy^2}$ B) $5xy\sqrt[3]{xy^2}$ C) $8xy\sqrt[3]{xy}$ D) $8xy\sqrt{xy^2}$

Objective: (17.3) Simplify radicals.
m50–30

Solve.

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

A) 60 B) 64 C) 68 D) 144

Objective: (17.6) Solve equations that contain radical expressions.
m50–33

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

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

A) $8 + 2i$ B) $8 - 2i$ C) $4 + 4i$ D) $-8 - 2i$

Objective: (17.7) Add or subtract complex numbers.

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

A) $34 + 0i$ B) $25 - 9i^2$ C) $16 + 0i$ D) $25 - 9i$

Objective: (17.7) Multiply complex numbers.

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

A) $\dfrac{58}{85} + \dfrac{79}{85}i$ B) $\dfrac{58}{77} - \dfrac{79}{77}i$ C) $\dfrac{86}{85} - \dfrac{47}{85}i$ D) $\dfrac{86}{77} - \dfrac{79}{77}i$

Objective: (17.7) Divide complex numbers.
m50–37

Use the square root property to solve the equation.

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

A) 11, –1 B) –1, –11 C) 6, –6 D) 41

Objective: (18.1) Use the square root property to solve quadratic equations.
m50–38

Use the quadratic formula to solve the equation.

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

A) – 6, 8 B) 6, –8 C) 6, 8 D) –48, 0

Objective: (18.2) Solve quadratic equations by using the quadratic formula.

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

A) –12, 12 B) –12 C) 12 – i, 12 + i D) 12

Objective: (18.2) Solve quadratic equations by using the quadratic formula.
m50–39

27) $x^2 + 18x + 70 = 0$ 27) _____

A) $9 + \sqrt{11}$ B) $-18 + \sqrt{70}$

C) $9 - \sqrt{70}, 9 + \sqrt{70}$ D) $-9 - \sqrt{11}, -9 + \sqrt{11}$

Objective: (18.2) Solve quadratic equations by using the quadratic formula.
m50–40

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

A) 4 – 2i, 4 + 2i B) 4 – 4i, 4 + 4i C) 4 + 2i D) 6, 2

Objective: (18.2) Solve quadratic equations by using the quadratic formula.
m50–41

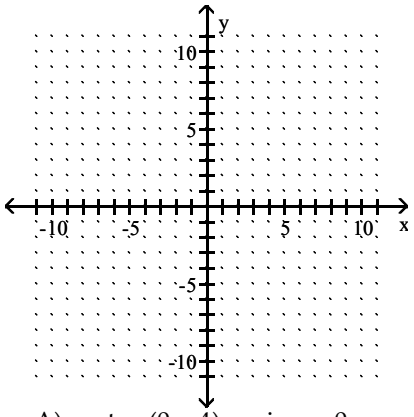
29) $2x^2 - 7x - 9 = 0$ 29) _____

A) $\frac{2}{9}, 1$ B) $\frac{9}{2}, -1$ C) $\frac{2}{9}, 0$ D) $\frac{2}{9}, -1$

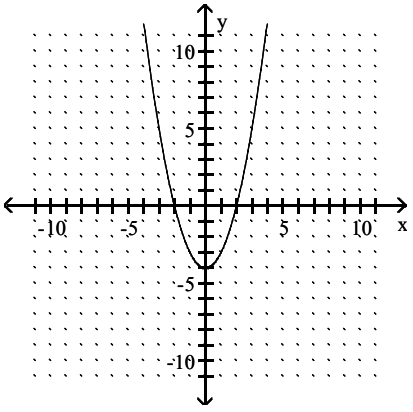
Objective: (18.2) Solve quadratic equations by using the quadratic formula.
m50–42

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

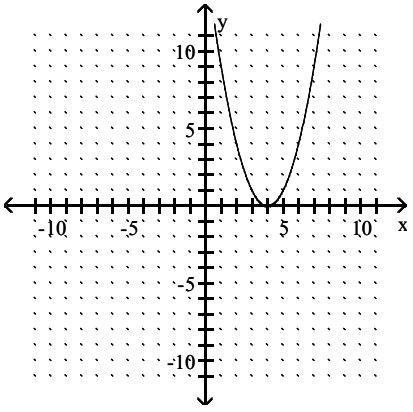
30) $f(x) = x^2 - 4$ 30) _____



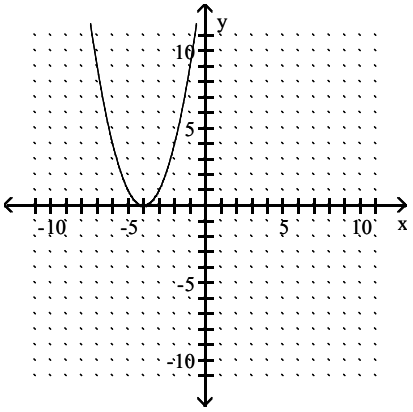
A) vertex (0, –4); axis x = 0



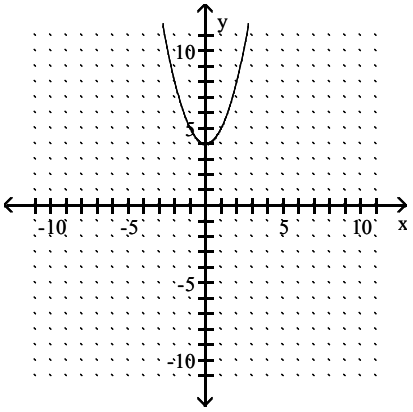
B) vertex (4, 0); axis x = 4



C) vertex (–4, 0); axis x = –4



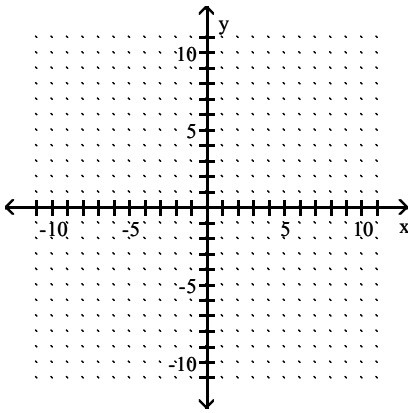
D) vertex (0, 4); axis x = 0



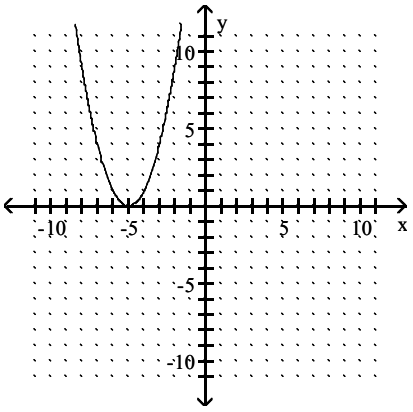
Objective: (18.5) Graph quadratic functions of the form f(x) = x^2 + k.

m50–44

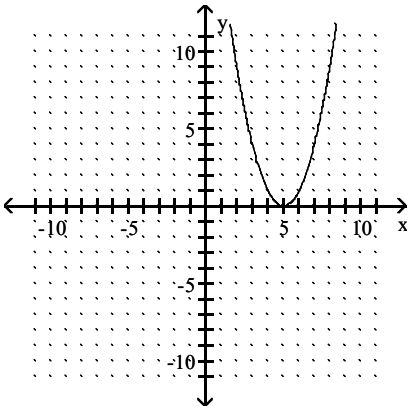
31) $f(x) = (x + 5)^2$ 31) _____



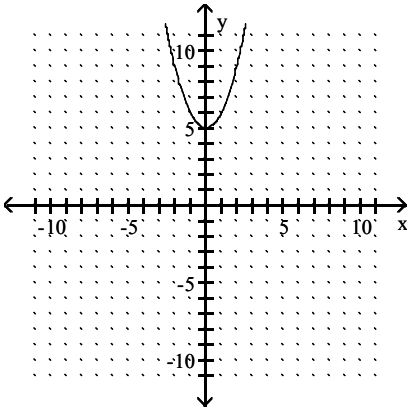
A) vertex (–5, 0); axis x = –5



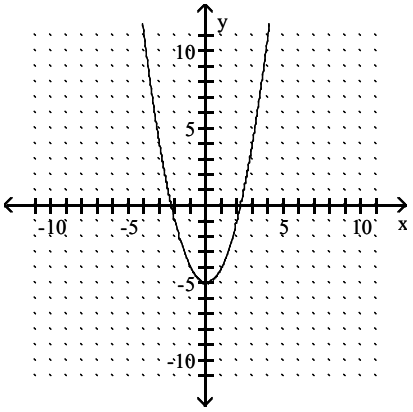
B) vertex (5, 0); axis x = 5



C) vertex (0, 5); axis x = 0

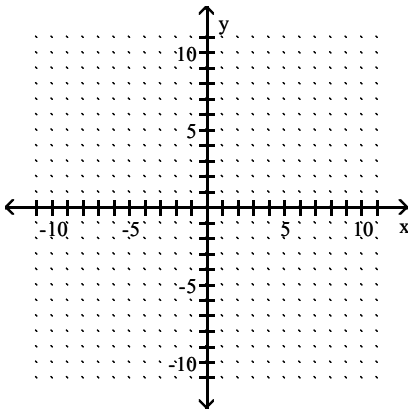


D) vertex (0, –5); axis x = 0

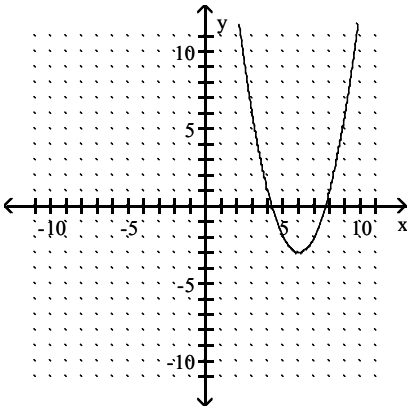


Objective: (18.5) Graph quadratic functions of the form f(x) = (x – h)^2.

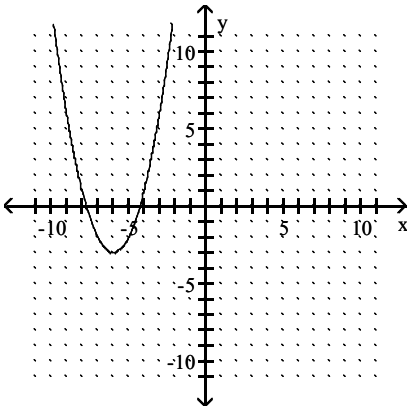
32) $f(x) = (x - 6)^2 - 3$ 32) _____



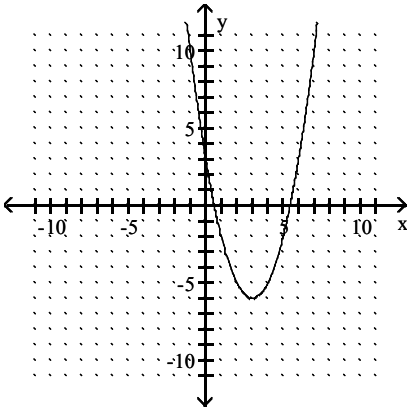
A) vertex (6, –3); axis x = 6



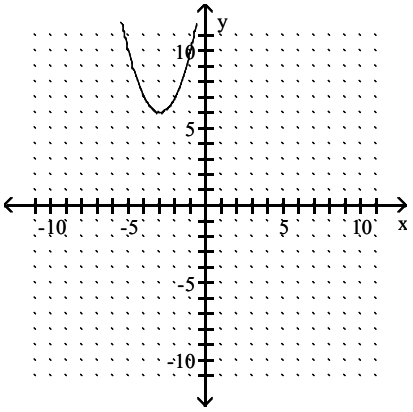
B) vertex (–6, –3); axis x = –6



C) vertex (3, –6); axis x = 3

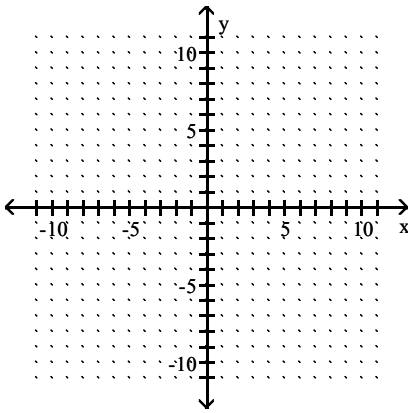


D) vertex (–3, 6); axis x = –3

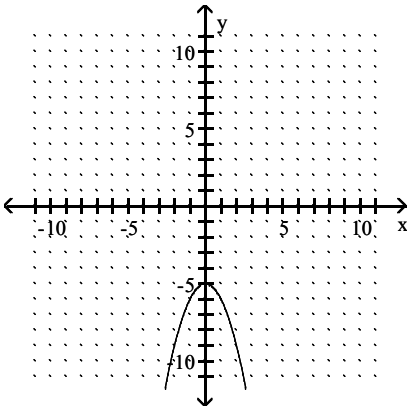


Objective: (18.5) Graph quadratic functions of the form f(x) = (x – h)^2 + k.

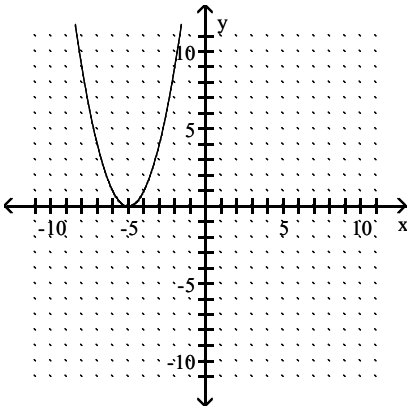
33) $f(x) = -x^2 - 5$ 33) _____



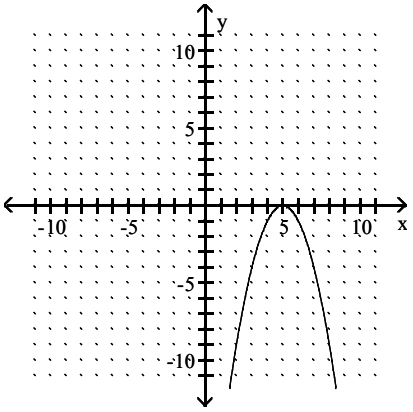
A) vertex (0, –5); axis x = 0



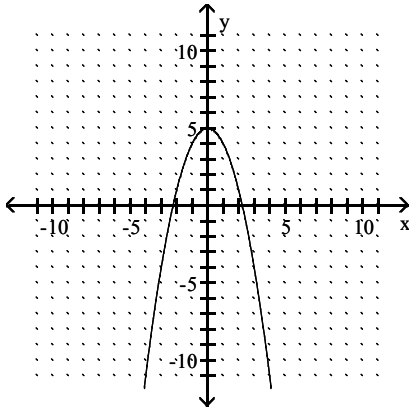
B) vertex (–5, 0); axis x = –5



C) vertex (5, 0); axis x = 5



D) vertex (0, 5); axis x = 0



Objective: (18.5) Graph quadratic functions of the form f(x) = a(x – h)^2 + k.

M50–46

Answer Key
Testname: AAFM032024350MT4

1) A
2) A
3) A
4) A
5) A
6) A
7) A
8) A
9) A
10) A
11) A
12) A
13) A
14) A
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16) A
17) A
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20) A
21) A
22) A
23) A
24) A
25) A
26) B
27) D
28) A
29) B
30) A
31) A
32) A
33) A