

Houston Community College  
College Algebra  
Review for Exam One

Name \_\_\_\_\_

Solve.

1)  $x^2 + 3 = 0$

A)  $\pm 3i$

B)  $\pm \sqrt{3}$

C)  $\pm 3$

D)  $\pm i\sqrt{3}$

Solve the equation by the zero-factor property.

2)  $4x^2 - 4x - 8 = 0$

A)  $\{2, -1\}$

B)  $\left\{\frac{1}{2}, 0\right\}$

C)  $\left\{\frac{1}{2}, -1\right\}$

D)  $\left\{\frac{1}{2}, 1\right\}$

Use the square root property to solve the equation.

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

A)  $\left\{\pm \frac{\sqrt{3}}{5}i\right\}$

B)  $\left\{\pm \frac{1 + \sqrt{5}}{5}\right\}$

C)  $\left\{\frac{1 \pm \sqrt{5}}{5}\right\}$

D)  $\{1 \pm \sqrt{5}\}$

Solve the equation using the quadratic formula.

4)  $4x^2 = -8x - 1$

A)  $\left\{\frac{-2 \pm \sqrt{3}}{8}\right\}$

B)  $\left\{\frac{-2 \pm \sqrt{3}}{2}\right\}$

C)  $\left\{\frac{-2 \pm \sqrt{5}}{2}\right\}$

D)  $\left\{\frac{-8 \pm \sqrt{3}}{2}\right\}$

Solve for the indicated variable.

5) Solve for  $v$ .

$$Ve = \frac{1}{2}mv^2$$

A)  $v = \pm \sqrt{\frac{Ve}{2m}}$

B)  $v = \frac{\pm \sqrt{2mVe}}{m}$

C)  $v = \pm 2 \frac{\sqrt{Ve}}{m}$

D)  $v = \pm \sqrt{2Ve}$

Solve the problem.

6) The area of a square is numerically 117 more than the perimeter. Find the length of the side.

A) 85 units

B) 13 units

C) 338 units

D) 52 units

Decide what values of the variable cannot possibly be solutions for the equation.

7)  $\frac{1}{x-5} + \frac{1}{x+9} = 10$

A)  $-\frac{1}{5}, \frac{1}{9}$

B) -5, 9

C)  $-\frac{1}{9}, \frac{1}{5}$

D) -9, 5

Solve the equation.

8)  $\frac{x+41}{8} = \frac{6x+1}{x}$

A)  $\left\{\frac{31}{47}\right\}$

B)  $\{-1, 8\}$

C)  $\{1, -8\}$

D)  $\left\{-\frac{8}{5}\right\}$

$$9) \frac{x}{x-8} = \frac{8}{x-8} + 8$$

A) -8

B) 0

C) 8

D)  $\emptyset$

$$10) \frac{4}{x-2} = 1 + \frac{6}{x+2}$$

A) {-4, 6}

B) {4, -6}

C) {-6, 6}

D)  $\emptyset$

$$11) \sqrt{x+7} + 5 = x$$

A) {2, 9}

B) {2}

C) {9, 18}

D) {9}

$$12) \sqrt[3]{3x^2 + 4x + 5} = \sqrt[3]{3x^2 - 4x + 3}$$

A) {-4}

B)  $\left\{-\frac{1}{4}\right\}$

C) {4}

D)  $\left\{\frac{1}{4}\right\}$

$$13) 6x^{2/5} + 16x^{1/5} + 8 = 0$$

A)  $\left\{32, \frac{32}{243}\right\}$

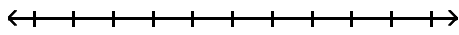
B) {2, 3}

C)  $\left\{-32, -\frac{32}{243}\right\}$

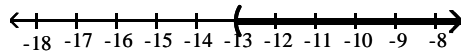
D)  $\left\{-2, -\frac{2}{3}\right\}$

**Solve and graph the inequality. Give answer in interval notation.**

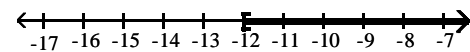
$$14) -13x + 6 \geq -12x - 6$$



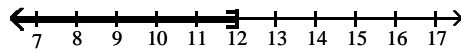
A)  $(-13, \infty)$



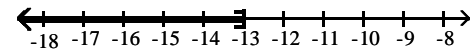
B)  $[-12, \infty)$



C)  $(-\infty, 12]$



D)  $(-\infty, -13]$



**Solve the quadratic inequality. Write the solution set in interval notation.**

$$15) x^2 - 11x + 28 \geq 0$$

A)  $(-\infty, 4] \cup [7, \infty)$

B)  $(-\infty, 4]$

C) [4, 7]

D) [7,  $\infty$ )

**Solve the rational inequality. Write the solution set in interval notation.**

$$16) \frac{x+6}{x+1} < 8$$

A)  $(-\infty, -1) \cup \left[-\frac{2}{7}, \infty\right)$

B)  $\left(-\infty, -\frac{2}{7}\right) \cup (1, \infty)$

C)  $\left(-1, -\frac{2}{7}\right)$

D)  $\emptyset$

**Solve the equation.**

17)  $|7x - 2| = 3$

A)  $\left\{\frac{5}{7}\right\}$

B)  $\left\{-\frac{1}{7}, -\frac{5}{7}\right\}$

C)  $\left\{\frac{5}{7}, -\frac{1}{7}\right\}$

D)  $\left\{\frac{1}{7}, -\frac{5}{7}\right\}$

**Solve.**

18)  $|x + 3| - 5 > 16$

A)  $(-\infty, -24) \cup (18, \infty)$

B)  $(-\infty, -24) \cup (8, \infty)$

C)  $(-24, 18)$

D)  $(-\infty, -8) \cup (24, \infty)$

**Solve the inequality. Write the solution set in interval notation.**

19)  $|2 - 3x| \leq 11$

A)  $\left[-\frac{13}{3}, 3\right]$

B)  $\left[-3, \frac{13}{3}\right]$

C)  $(-\infty, 3] \cup \left[\frac{13}{3}, \infty\right)$

D)  $(-\infty, -3] \cup \left[\frac{13}{3}, \infty\right)$

**Solve.**

20)  $|x + 6| \geq 0$

A)  $(-\infty, \infty)$

B)  $(-\infty, -6) \cup (-6, \infty)$

C)  $\emptyset$

D)  $[-6, 6]$

21)  $|4x - 5| \leq -4$

A)  $\left(-\infty, \frac{1}{4}\right) \cup \left(-\frac{7}{4}, \infty\right)$

B)  $\left(\frac{9}{4}, \frac{1}{4}\right)$

C)  $\emptyset$

D)  $\left(-\infty, \frac{9}{4}\right) \cup \left(\frac{1}{4}, \infty\right)$

**Find the distance between the pair of points.**

22)  $(5, -7)$   $(3, -3)$

A)  $12\sqrt{3}$

B)  $2\sqrt{5}$

C) 12

D) 6

**Find the center-radius form of the equation of a circle.**

23) center  $(9, -4)$ , radius 3

A)  $(x + 9)^2 + (y - 4)^2 = 9$

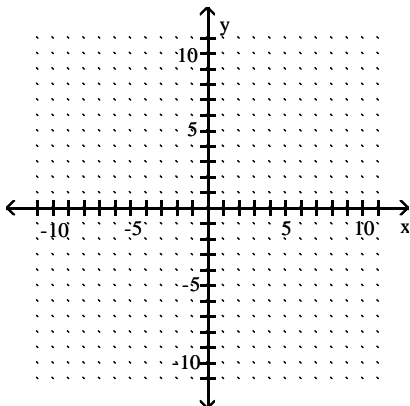
B)  $(x - 9)^2 + (y + 4)^2 = 9$

C)  $(x - 4)^2 + (y + 9)^2 = 3$

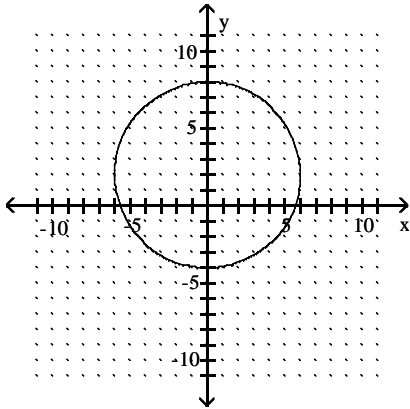
D)  $(x + 4)^2 + (y - 9)^2 = 3$

**Graph the circle.**

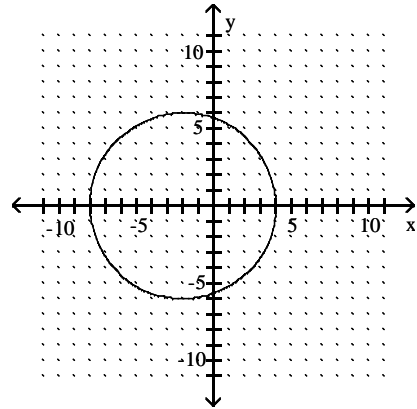
24)  $x^2 + (y - 2)^2 = 36$



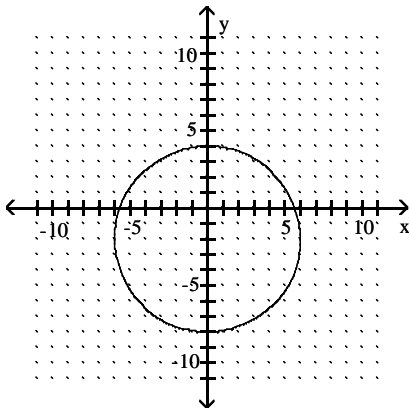
A)



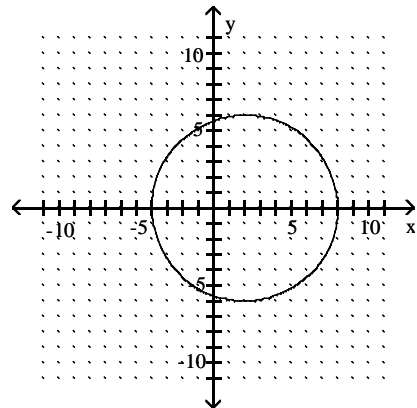
B)



C)



D)



Find the center and radius of the circle.

25)  $x^2 + y^2 + 14x + 2y + 34 = 0$

A)  $(-1, -7); r = 4$

B)  $(-7, -1); r = 4$

C)  $(7, 1); r = 16$

D)  $(1, 7); r = 16$

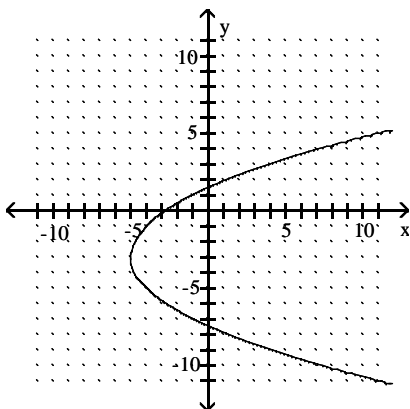
Decide whether the relation defines a function.

26)  $\{(-8, 1), (-3, -6), (3, -7), (3, 4)\}$

A) Function

B) Not a function

27)



A) Function

B) Not a function

**Solve the problem.**

28) Find  $f(-2)$  when  $f(x) = x^2 - 2x - 1$

A) 9

B) -1

C) 7

D) 1

## Answer Key

Testname: M1314 REVIEW FOR EXAM 1

- 1) D
- 2) A
- 3) C
- 4) B
- 5) B
- 6) B
- 7) D
- 8) B
- 9) D
- 10) B
- 11) D
- 12) B
- 13) C
- 14) C
- 15) A
- 16) A
- 17) C
- 18) A
- 19) B
- 20) A
- 21) C
- 22) B
- 23) B
- 24) A
- 25) B
- 26) B
- 27) B
- 28) C