

Solve the radical equation, and check all proposed solutions.

1)  $\sqrt{x+3} = 7$  1) \_\_\_\_\_  
A) {100} B) {52} C) {49} D) {46}

2)  $\sqrt{6x+16} = x$  2) \_\_\_\_\_  
A)  $\left\{-\frac{16}{5}\right\}$  B)  $\emptyset$  C) {8} D) {-2, 8}

3)  $x - \sqrt{3x-2} = 4$  3) \_\_\_\_\_  
A) {9} B) {-1} C) {2, 9} D) {1, 2}

4)  $\sqrt{2x+3} - \sqrt{x+1} = 1$  4) \_\_\_\_\_  
A) {3} B)  $\emptyset$  C) {-1, 3} D) {-3, -1}

Find the x-intercepts of the graph of the equation.

5)  $y = \sqrt{3x-2} + \sqrt{11+x} + 1$  5) \_\_\_\_\_  
A)  $-\frac{5}{2}$  B) 5 C) 0 D) No x-intercepts

Solve and check the equation.

6)  $(x+11)^{3/2} = 125$  6) \_\_\_\_\_  
A) {14} B)  $\left\{\sqrt[3]{5} - 11\right\}$  C) {36} D) {-6}

7)  $(5x+1)^{1/2} = 2$  7) \_\_\_\_\_  
A)  $\left\{\frac{4}{5}\right\}$  B) 5 C)  $\left\{-\frac{1}{5}\right\}$  D)  $\left\{\frac{3}{5}\right\}$

8)  $(x^2+8x+16)^{3/4} - 8 = 19$  8) \_\_\_\_\_  
A) {-13, 5} B) {27} C) {-13, 0, 5} D) {5}

Find all values of x satisfying the given conditions.

9)  $y = (x+1)^{3/2}$  and  $y = 125$  9) \_\_\_\_\_  
A) {26} B) {4} C)  $\left\{\sqrt[3]{5} - 1\right\}$  D) {24}

Solve the absolute value equation or indicate that the equation has no solution.

10)  $|x| = 5$  10) \_\_\_\_\_  
A) {25} B) {-5, 5} C) {-5} D) {5}

11)  $|x+1| = 5$  11) \_\_\_\_\_  
A) {-4} B) {6, 4} C) {-6, 4} D)  $\emptyset$

- 12)  $|x + 6| = 4$   
 A)  $\{-2\}$  B)  $\{-10, -2\}$  C)  $\{2, 10\}$  D)  $\emptyset$  12) \_\_\_\_\_
- 13)  $|8x + 4| = 2$   
 A)  $\left\{\frac{1}{4}, \frac{3}{4}\right\}$  B)  $\left\{-\frac{1}{2}, -\frac{3}{2}\right\}$  C)  $\left\{-\frac{1}{4}, -\frac{3}{4}\right\}$  D)  $\emptyset$  13) \_\_\_\_\_
- 14)  $3|x - 3| = 18$   
 A)  $\{3, -9\}$  B)  $\{3\}$  C)  $\{9, -3\}$  D)  $\emptyset$  14) \_\_\_\_\_
- 15)  $|6x + 7| + 4 = 6$   
 A)  $\left\{-\frac{9}{7}, -\frac{5}{7}\right\}$  B)  $\left\{-\frac{3}{2}, -\frac{5}{6}\right\}$  C)  $\left\{\frac{5}{6}, \frac{3}{2}\right\}$  D)  $\emptyset$  15) \_\_\_\_\_
- 16)  $|4x - 2| + 7 = 4$   
 A)  $\left\{-\frac{1}{4}\right\}$  B)  $\left\{\frac{5}{4}, \frac{1}{4}\right\}$  C)  $\left\{-\frac{1}{4}, -\frac{5}{4}\right\}$  D)  $\emptyset$  16) \_\_\_\_\_
- 17)  $|5x + 9| = |x + 4|$   
 A)  $\left\{\frac{5}{4}, \frac{13}{6}\right\}$  B)  $\left\{-\frac{5}{4}, -\frac{13}{6}\right\}$  C)  $\left\{-\frac{5}{4}, \frac{7}{3}\right\}$  D)  $\emptyset$  17) \_\_\_\_\_
- 18)  $\left|\frac{1}{2}x + 2\right| = \left|\frac{3}{4}x - 2\right|$   
 A)  $\{10, 10\}$  B)  $\{16, 0\}$  C)  $\{16, 12\}$  D)  $\emptyset$  18) \_\_\_\_\_
- 19)  $\left|\frac{4x + 12}{3}\right| = 4$   
 A)  $\{-6, 0\}$  B)  $\{6, 0\}$  C)  $\{-6, 6\}$  D)  $\emptyset$  19) \_\_\_\_\_
- 20)  $|2(x + 1) + 4| = 12$   
 A)  $\{-9, 0\}$  B)  $\{-7, 0\}$  C)  $\{-9, 3\}$  D)  $\{-7, 5\}$  20) \_\_\_\_\_
- 21)  $|x^2 - 4x + 4| = 2$   
 A)  $\{2 + \sqrt{2}\}$  B)  $\{2 - \sqrt{2}, 2 + \sqrt{2}\}$  C)  $\{2 - \sqrt{2}\}$  D)  $\emptyset$  21) \_\_\_\_\_

Find all values of x satisfying the given conditions.

- 22)  $y = |x - 2|$  and  $y = 3$   
 A)  $-5, 1$  B)  $5$  C)  $-1, 5$  D) No solutions 22) \_\_\_\_\_
- 23)  $y = |2x + 7|$  and  $y = 6$   
 A)  $-\frac{1}{7}, -\frac{13}{7}$  B)  $-\frac{1}{2}, -\frac{13}{2}$  C)  $\frac{1}{2}, \frac{13}{2}$  D) No solutions 23) \_\_\_\_\_

Use graphs to find the set.

- 24)  $(-8, 0) \cap [-1, 3]$   
 A)  $(-8, 3]$  B)  $(-8, -1]$  C)  $[-1, 0)$  D)  $(0, 3]$  24) \_\_\_\_\_

25)  $(-9, 0) \cup [-3, 2]$

A)  $(-9, -3]$

B)  $(-9, 2]$

C)  $(0, 2]$

D)  $[-3, 0)$

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

Solve the linear inequality. Other than  $\emptyset$ , use interval notation to express the solution set and graph the solution set on a number line.

26)  $6x - 4 > 5x + 3$

Solve the compound inequality. Other than  $\emptyset$ , use interval notation to express the solution set and graph the solution set on a number line.

27)  $-8 < x - 1 \leq 5$

Solve the problem.

28) The formula for converting Fahrenheit temperature,  $F$ , to Celsius temperature,  $C$ , is

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

$$C = \frac{5}{9}(F - 32).$$

If Celsius temperature ranges from  $-20^\circ$  to  $50^\circ$ , inclusive, what is the range for the Fahrenheit temperature?

A)  $(-20^\circ\text{F}, -12^\circ\text{F})$

B)  $(-4^\circ\text{F}, 122^\circ\text{F})$

C)  $[-4^\circ\text{F}, 122^\circ\text{F}]$

D)  $[-20^\circ\text{F}, -12^\circ\text{F}]$

29) The formula for converting Fahrenheit temperature,  $F$ , to Celsius temperature,  $C$ , is

$$C = \frac{5}{9}(F - 32).$$

If Celsius temperature ranges from  $-5^\circ$  to  $55^\circ$ , inclusive, what is the range for the Fahrenheit temperature?

Solve the absolute value inequality. Other than  $\emptyset$ , use interval notation to express the solution set and graph the solution set on a number line.

30)  $|x| < 2$

31)  $|x| > 5$

32)  $|x + 6| \leq 0$

33)  $|x + 3| + 6 \leq 10$

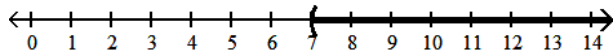
34)  $5 + \left|1 - \frac{x}{2}\right| \geq 8$

35)  $|4x - 6| + 1 > -8$

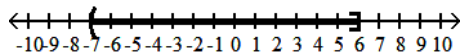
Answer Key

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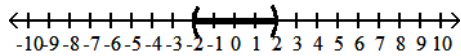
- 1) D
- 2) C
- 3) A
- 4) C
- 5) D
- 6) A
- 7) D
- 8) A
- 9) D
- 10) B
- 11) C
- 12) B
- 13) C
- 14) C
- 15) B
- 16) D
- 17) B
- 18) B
- 19) A
- 20) C
- 21) B
- 22) C
- 23) B
- 24) C
- 25) B
- 26)  $(7, \infty)$



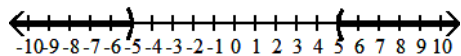
- 27)  $(-7, 6]$



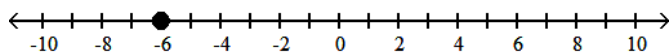
- 28) C
- 29)  $[ \text{ } ^\circ\text{F}, 131^\circ\text{F}]$
- 30)  $(-2, 2)$



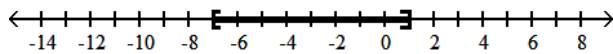
- 31)  $(-\infty, -5) \cup (5, \infty)$



- 32)  $\{-6\}$



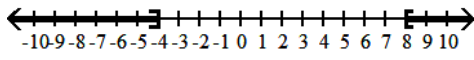
- 33)  $[-7, 1]$



Answer Key

Testname: PRACTICE01

34)  $(-\infty, -4] \cup [8, \infty)$



35)  $(-\infty, \infty)$

