***College Algebra, 5e* (Young)**

**Chapter 1 Equations and Inequalities**

1.7 Absolute Value Equations and Inequalities

1) Solve the equation.

|x| = -15

A) {-15, 15}

B) {-15}

C) {15}

D) No solution

Answer: D

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

2) Solve the equation.

| y| = 12

A) {12, -12}

B) {12}

C) {-12}

D) No solution

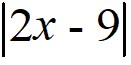
Answer: A

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

3) Solve the equation.

 = 27

A) {18}

B) {-18, 9}

C) {-9, 18}

D) {-9}

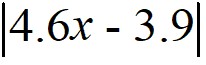
Answer: C

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

4) Solve the equation.

 = 4.6

A) {1.85}

B) {-0.15, 1.85}

C) {-1.85, 0.15}

D) {0.15, 1.85}

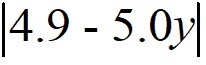
Answer: B

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

5) Solve the equation.

 = 5.0

A) {-0.02}

B) {1.98, 0.02}

C) {-1.98, 0.02}

D) {-0.02, 1.98}

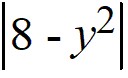
Answer: D

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

6) Solve the equation.

 = 1

A) {±square root of (3)}

B) {7, 9}

C) {±3, ±square root of (7)}

D) {3, square root of (7)}

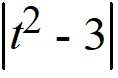
Answer: C

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

7) Solve the equation.

 = 1

A) {2, 4}

B) {±2, ±square root of (2)}

C) {±2}

D) {2, square root of (2)}

Answer: B

Diff: 2 Var: 1

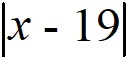
Chapter/Section: Ch 01, Sec 07

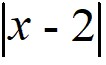
Learning Objective: Solve absolute value equations.

8) Write an absolute value equation that describes the statement.

Any number whose distance from *x* = 19 on the number line is 2.

A) |x| = 19

B)  = 2

C)  = 19

D) |x| = 2

Answer: B

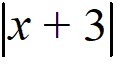
Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 07

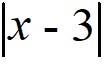
Learning Objective: Solve absolute value equations.

9) Write an absolute value equation that describes the statement.

Any number whose distance from *x* = -3 on the number line is 20.

A)  = 20

B) |x| = -3

C)  = 20

D) |x| = 20

Answer: A

Diff: 3 Var: 1

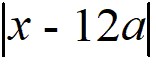
Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

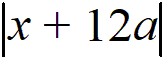
10) Write an absolute value equation that describes the statement.

Any number whose distance from *x* = -12*a* on the number line is 1.

A) |x| = 1

B)  = 1

C) |x| = -12*a*

D) = 1

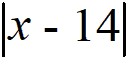
Answer: D

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

11) Solve the inequality and express the solution in interval notation.

 < 10

A) (-∞, 24)

B) (4, 24)

C) (-∞, 4) ∪ (24, ∞)

D) (-24, 24)

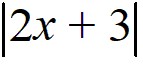
Answer: B

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

12) Solve the inequality and express the solution in interval notation.

 ≥ 17

A) [-10, 7]

B) (-10, 7)

C) (-∞, -10] ∪ [7, ∞)

D) (-∞, -10) ∪ (7, ∞)

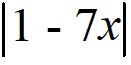
Answer: C

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

13) Solve the inequality and express the solution in interval notation.

 ≤ 8

A) [-1, 9/7]

B) (-1, 9/7)

C) (-∞, 9/7]

D) [-1, ∞)

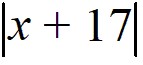
Answer: A

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

14) Write an inequality that describes the statement any real number at least 2 units from -17.

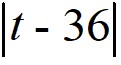
Answer:  ≥ 2

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

15) If the average temperature in Chicago is 36 degrees Fahrenheit plus or minus 12 degrees, write an absolute value inequality representing the temperature in Chicago.

Answer:  ≤ 12

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

16) Solve the inequality and express the solution in interval notation.

3 - 7 ≥ 11

A) (-∞, -2/3) ∪ (-2/3, ∞)

B) (-2/3, 2/3)

C) [2/3, ∞)

D) (-∞, -2/3] ∪ [-2/3, ∞)

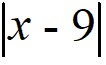
Answer: D

Diff: 4 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

17) Solve the inequality and express the solution in interval notation.

2 + 1 ≤ 4

A) [-21/2, 21/2]

B) [15/2, 21/2]

C) (15/2, 21/2)

D) (-∞, 21/2)

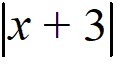
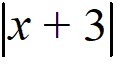
Answer: B

Diff: 4 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

18) Solve the equality.

5 -  = 13- 5

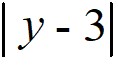
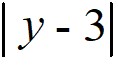
Answer: {-5, -1}

Diff: 4 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

19) Solve the equality.

3 - 3 = 2 + 5

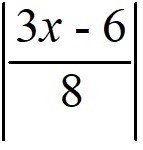
Answer: {-5, 11}

Diff: 4 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value equations.

20) Solve the inequality and express the solution in interval notation.

 ≥ (9/8)

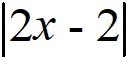
Answer: (-∞, -1] ∪ [5, ∞)

Diff: 4 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

21) Solve the inequality and express the solution in interval notation.

2 + 2 ≤ 30

Answer: [-6, 8]

Diff: 4 Var: 1

Chapter/Section: Ch 01, Sec 07

Learning Objective: Solve absolute value inequalities.

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