

## 2C Absolute Value and More

Name: \_\_\_\_\_ Per: \_\_\_\_\_

SHOW YOUR WORK ONLY IN PENCIL. NO WORK NO CREDIT.

**Objectives:** Solve equations with absolute value.Due: Sept 20<sup>th</sup> / Sept 21<sup>st</sup>**Simplify** the following roots to the **lowest integer radicand**. (No decimals!)

1.  $\sqrt{56}$

2.  $\sqrt{108}$

3.  $\sqrt{40}$

4.  $\sqrt[3]{32}$

**Solve** the following absolute value equations.

5.  $|x + 5| = 14$

8.  $\frac{|x+8|}{9} = 4$

6.  $\left|\frac{x}{9}\right| = 2$

9.  $-4\left|\frac{x}{5}\right| = -8$

7.  $8\left|\frac{b}{10}\right| = 8$

10.  $|x - 9| + 5 = 19$

**Solve** for the given variable and **explain each of your steps**.

11.  $3x + 9 = 44 - 2x$  GIVEN (What you know)

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13.  $5x - 7 = 7x - 17$  GIVEN

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12.  $8x - (3x + 2) = 1$  GIVEN

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14.  $4(x - 5) = 4$

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15. The average January temperature in a northern Canadian city is  $1^{\circ}$  F. The actual January temperature for that city may be about  $5^{\circ}$  warmer or colder.
- Write an absolute value equation \_\_\_\_\_
  - Solve and list the minimum and maximum temperatures. \_\_\_\_\_
16. Tanner's Camaro averages 12 miles per gallon in the city. The actual mileage varies by  $\pm 5$  miles per gallon.
- Write an equation \_\_\_\_\_
  - Solve and list the minimum and maximum temperatures. \_\_\_\_\_

**Solve for y and simplify for an exact answer (if needed)**

17.  $2y^3 + 2 = 18$

18.  $3(2 + y^2) - 2 = 40$

19.  $-2 + 2(y^2 - 5) = 6 + y^2$

20.  $\frac{y+9}{10} = \frac{2}{8}$

21.  $\frac{7y-1}{4} = \frac{3}{6}$

22.  $\frac{7}{2} = \frac{7}{y-3}$

23.  $\left|\frac{y}{7}\right| = 5$

24.  $\frac{|-8-8y|}{6} = 5$

25.  $|y - 5| = 7$

26.  $2 = -4 + \sqrt{a}$

27.  $-7\sqrt{2a+9} = -35$

28.  $2\sqrt{\frac{h}{4}} = 6$

**Solve each equation and then CHECK YOUR ANSWERS.**

29.  $-138 = -6(6b - 7)$     ✓  $-138 = -6(6\boxed{\phantom{00}} - 7)$

30.  $-4(y + 2) = 28 + 2y$     ✓