

## 2R Solving Equation Review

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

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

Due: Sept 28<sup>th</sup> / Oct 1<sup>st</sup>

1. Simplify the following roots. Give exact answers. No decimals. No calculators.

a.  $\sqrt{48}$

b.  $\sqrt{140}$

c.  $\sqrt{150}$

d.  $\sqrt{86}$

2. Solve the following absolute value equation.

a.  $3|x - 6| = 9$

b.  $|2k + 1| + 3 = 10$

c.  $\frac{1}{2}|7 + 2m| + 3 = 7$

3. Solve the following.

a.  $3\sqrt{x - 6} = 9$

b.  $\sqrt{2k + 1} + 3 = 10$

c.  $\frac{1}{2}\sqrt{7 + 2m} + 3 = 7$

Solve each equation and then check your answers.

4.  $2(2x^2 - 3) - 8 = 4 + 2x^2$  ✓

6.  $3n^3 - 4 = 2(6 + n^3)$  ✓

5.  $-18 - 6k^2 = 6(-18 + 3k^2)$  ✓

7.  $5n^2 + 34 = -2(1 - 7n^2)$  ✓

Solve for the given variable in the following equations

8. Solve for b:  $7(b^2 + 3) = 28$

11. Solve for a:  $8(n + 5) = 4a$

9. Solve for r:  $24t + 5r = -3r + 12$

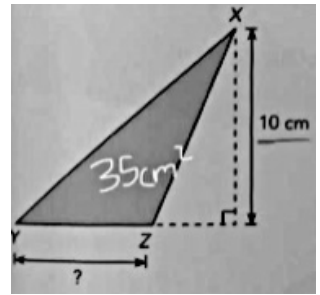
12. Solve for b:  $4b^2 + 2(a + 2) = 8$

10. Solve for m:  $-1 + 16m - 5n = 19 + m$

13. Solve for x:  $2(x + y) - 12 = 8x + 12$

14.  $A = \frac{1}{2}bh$  This is the equation for: \_\_\_\_\_ where h represents \_\_\_\_\_ and b represents \_\_\_\_\_

a. If you know that the area of the triangle is  $35\text{cm}^2$  and the height is  $10\text{cm}$ .  
Solve for b and find the base.



b. Solve for h in the given equation.

15.  $V = \pi r^2 h$  This is the equation for: \_\_\_\_\_ where h represents \_\_\_\_\_ and r represents \_\_\_\_\_

a. Re-arrange to solve for h

b. Solve for r

**Solve for x showing your work to the left. Explain your steps to the right.** Leave as exact.

16.  $2(y + 3) = 8 + 4(x - 6)$  GIVEN

17.  $-2(x^2 - 10) = -4 - x^2$  GIVEN

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Write an equation and solve to answer the question.**

18. Twice a number, decreased by twenty-nine is the same as seven. What is the number?

19. Thirty-two is three times a number increased by eight. What is the number?

20. Greg's motorcycle shop has ATV and motorcycles. He has a total of 45 vehicles all together. Define your variables. \_\_\_\_\_ Write an equation. \_\_\_\_\_

21. Fred's motorcycle shop has ATV (4 wheels) and motorcycles (2 wheels). He has a total of 130 wheels. Using the variables from above, write an equation. \_\_\_\_\_

22. Oceanside Bike Rental Shop charges 13 dollars plus 8 dollars an hour for renting a bike.

a. Define your variables. \_\_\_\_\_

b. Write the equation. \_\_\_\_\_

c. Dan paid \$53 to rent a bike, how many hours did he pay to have the bike checked out? \_\_\_\_\_

23. Emily has \$36 in \$5 bills and singles (\$1 bills).

a. Define your variables: \_\_\_\_\_

b. Write an equation to represent the money \_\_\_\_\_

c. If Emily has 2 five-dollar bills, how many singles does she have? SYW. \_\_\_\_\_

E.C. The sum of the digits of a certain two-digit number is 7. Reversing its digits increases the number by 9. What is the number?