

Name:

Date:

Hour:

Algebra 1
Unit 1 Review

Simplify each radical expression.

1. $-2\sqrt{24}$

2. $6\sqrt{54}$

3. $\sqrt{72}$

4. Classify each number (real, rational, irrational, whole, natural, integer).

$-\sqrt{12}$: _____

-3 : _____

$-5.\overline{66}$: _____

0 : _____

2 : _____

$-\frac{2}{3}$: _____

5. If $4(x-2) + 6x = 12 + 5x$, what is the value of $2x - 3$?

6. Write and solve an equation to represent the following:

The quotient of 6 and the quantity of 2 times a number added to 4 is equal to 8

Solve each equation.

7. $3(2x - 5) = 2(3x - 2)$

8. $4x - 3 = 2x + 5$

9. $\frac{2}{3}x - 6 = \frac{4}{5}$

10. On the first day of the year, Alicia has \$1000 in her savings account and started spending \$25 a week. Her sister Kelsey had \$650 in her savings account and started saving \$15 a week. After how many weeks will the sisters have the same amount? What will that amount be?

11. A cyclist travels 56 miles in 4 hours. What is the cyclist speed in feet per minutes?

12. A cheetah can run at a rate of 180 miles in 2 hours. Find the unit rate in miles per hour.

13. The ratio of junior varsity members to varsity members on the track team is 3:5. There are 25 varsity members on the team. Write and solve a proportion to find the number of junior varsity members.

14. Solve the following equation for x: $\frac{x}{2b} - a = 3y$.

15. Write a justification for each step.

Statements	Reasons
$x + 4 = 8$ $\quad -4 \quad -4$ $x + 4 - 4 = 8 - 4$ $x + 0 = 4$ $x = 4$	

16. Solve the following equation for y: $-2x - 5y = 15$

17. A jar contains pennies and dimes. The ratios of pennies to dimes is 4 : 7. There are 28 dimes.
How many TOTAL coins are there?

18. $\frac{2}{8} = \frac{k+5}{k}$

19. $\frac{9}{4} = \frac{m-9}{m+2}$

20. A 6 foot tall man casts a shadow that is 9 feet long. Next to him is a tree that casts a shadow that is 21 feet long. Find the height of the tree.

21. Solve the equation for y: $3x + 5y = 30$