Algebra 1 Test Review
Solving Equations, Inequalities, & Literals

Name _____

Date _____

SOLVING EQUATIONS.

1    $4 = m - 11$

2    $\frac{1}{8}x = -2$

3    $\frac{3}{5}b = 6$

   A $b = 2$
   B $b = 10$
   C $b = 30$
   D $b = 90$

4    $32 = 41 - y$

5    $-\frac{4}{5}z = -\frac{1}{10}$

6    $6 - 2x = 12$

   A $x = -3$
   B $x = -2$
   C $x = 2$
   D $x = 3$

7   Select ALL equations where the solution is 6.

   A $5y + 4 = 2y + 13$
   B $\frac{3}{2}x = 9$
   C $a + 2 = 3a - 6$
   D $\frac{1}{2}x + 7 = 10$
   E $3t - 4 = 14$

8    $5 - 4d = -27$

9    $\frac{3}{4}x - 8 = 1$

   A $x = 8$
   B $x = 10$
   C $x = 12$
   D $x = 14$

10   $8a = 20 + 6a$

11 $2(x + 8) = 4x + 16$

12   $3x + 8 = 6x + 17$

13      $5x - 8 = 8x + 31$

      A $x = -13$
      B $x = -11$
      C $x = 3$
      D $x = 9$

14      $12m + 8 = 14m - 16$

15 $11 + 3(x - 2) = 3x - 1$

16 $2(x - 5) = 4x - (10 + 2x)$

SOLVING LITERAL EQUATIONS FOR A SPECIFIED VARIABLE.

17   Given the formula for the area of a triangle: $A = \frac{1}{2}bh$

    a.)   Solve for b

    b.)   Solve for h

18   Given the formula for the perimeter of a rectangle: $p = 2(l + w)$

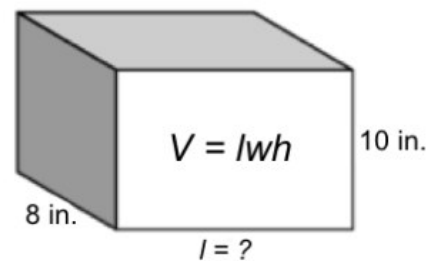   a.)   Solve for l

    b.)   Solve for w

19   Solve the following for x.
$$mx - 3 = y$$

20   Kristy is making a rectangular quilt that is 3 feet longer than it is wide. If the perimeter of the quilts is to be 34 feet, what will be its dimensions?
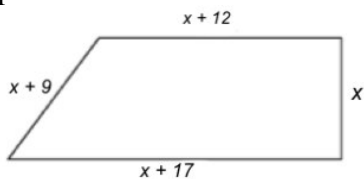
      A   3 ft by 8 ft
      B   5 ft by 8 ft
      C   7 ft by 4 ft
      D   7 ft by 10 ft

21   The volume of a rectangular solid is 960 cubic inches. The width is 8 inches and the height is 10 inches.
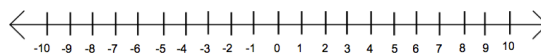
$V = lwh$ 10 in.

8 in.

$l = ?$

What is the length of the solid?

22   The dimensions of a trapezoid are pictured below.
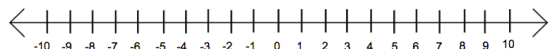
$x + 12$

$x + 9$ x

$x + 17$

If the perimeter of the property is 82 feet, what is the value of x?

26   Solve the inequality & Graph it's solution on a number line.
$3(n + 1) \le 2n + 6$

<----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---->
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

SOLVING LINEAR INEQUALITIES

23   Solve the inequality & Graph it's solution on a number line.
$m + 9 > 1$

<----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---->
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

27   Solve the inequality
$b - \frac{5}{6} > 2$

28   Solve the inequality
$13x + 9 > 16x - 6$

24   Solve the inequality
$9 > p - 2$

A $p > 7$
B $p < 7$
C $p > 11$
D $p < 11$

29   Solve the inequality
$10r - 16 < 14r - 8$

A $r > -2$
B $r > 2$
C $r < 2$
D $r < -2$

25   Solve the inequality
$38 > 10 - 7v$

A $v > 14$
B $v < 7$
C $v > -4$
D $v < -4$

30   An inequality is solved as shown. Between which two steps is an error made? Explain the error.

Step 1: $-3(x + 2) \ge 8$

Step 2: $-3x + 6 \ge 8$

Step 3: $-3x \ge 2$

Step 4: $x \le -\frac{2}{3}$

31   Given: $3x + 6 \geq 7x - 4$

Using the given inequality above, select ALL that illustrate the application of the *subtraction* property of inequality.

A $3x + 6 - 7x \geq 7x - 4 - 7x$

B $1/3(3x + 6) \geq 1/3(7x - 4)$

C $3x + 6 - 6 \geq 7x - 4 - 6$

D $3x + 6 - 3x \geq 7x - 4 - 3x$

E $3(x + 2) \geq 7x - 4$

F $\dfrac{(3x + 6)}{7} \geq \dfrac{(7x - 4)}{7}$

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CUMULATIVE REVIEW FROM PREVIOUS TEST(S)

32   If 75 students sign up for a field trip and each bus carries x students, which expression could be used to determine the number of vehicles needed for the trip?

A $\dfrac{x}{75}$

B $75 - x$

C $75x$

D $\dfrac{75}{x}$

33   What is the value of the expression
$$\frac{x^y + z}{z}$$
$x = 2$, $y = 3$ and $z = 4$

34   Give the following, identify the property used to justify each step.

$5(x + 1) + 6(x + 2)$	Given
$5x + 5 + 6x + 12$	_____
$5x + 6x + 5 + 12$	_____
$(5x + 6x) + (5 + 12)$	_____
$11x + 17$	_____