Please have your homework on your desk. Calculator? Yes!

DATE: 9/21/17 SHSMunford.weebly.com

TSW Review for Test on Equations, Inequalities, & Literals

QRQ5:

1 Evaluate $-x^2 - y^2 - z$

When x = -4, y = -2 and z = -1

NORMAL FLOAT AUTO REAL RADIAN MP

$-(-4)^2-(-2)^2-(-1)$

-19

2 Simplify

$2(x - 4) - 3(x - 5)$

$2x - 8 - 3x + 15$

$-x + 7$

Algebra 1 Test Review
Solving Equations, Inequalities, & Literals

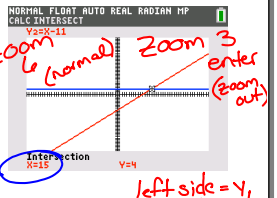
SOLVING EQUATIONS.

1 $4 = m - 11$

$+11 \quad +11$

If $15 = m$

then $m = 15$

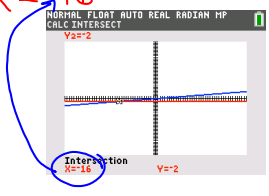


Zoom 6 (normal) Zoom 3 enter (zoom out)

left side = Y_1
Right side = Y_2
Graph
2nd
Trace
5
enter
enter
enter

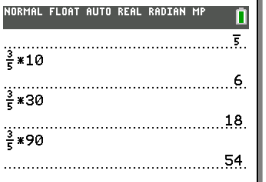
2 $\left(\frac{8}{1}\right)\frac{1}{8}x = -2\left(\frac{8}{1}\right)$

$x = -16$



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

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



fraction
Alpha
Y=
1

Same info
2nd
enter

4 $32 = 41 - y$

$-41 \quad -41$

$\frac{-9}{-1} = \frac{-y}{-1}$

If $9 = y$ then $y = 9$

5 $\left(-\frac{5}{4}\right)\left(-\frac{4}{5}\right)z = -\frac{1}{10}\left(-\frac{5}{4}\right)$

$z = \frac{5}{40} = \frac{1}{8}$

6 $6 - 2x = 12$

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

$6 - 2x = 12$

$-6 \quad -6$

$\frac{-2x}{-2} = \frac{6}{-2}$

$x = -3$

7 Select ALL equations where the solution is 6.

A $5y + 4 = 2y + 13$

B $\frac{3}{2}x = 9$ $x = 6$

C $a + 2 = 3a - 6$

D $\frac{1}{2}x + 7 = 10$

E $3t - 4 = 14$

A $5y+4=2y+13$, $-2y \quad -2y$, $3y+4=13$, $-4 \quad -4$, $3y=9$, $y=3$

C $a+2=3a-6$, $-a \quad -a$, $2=2a-6$, $+6 \quad +6$, $\frac{8}{2}=\frac{2a}{2}$, $4=a$

D $\frac{1}{2}x+7=10$, $-7 \quad -7$, $\frac{2}{1}\cdot\frac{1}{2}x=3\left(\frac{2}{1}\right)$, $x=6$

E $3t-4=14$, $+4 \quad +4$, $\frac{3t}{3}=\frac{18}{3}$, $t=6$

8 $5 - 4d = -27$

$-5 \quad -5$

$\frac{-4d}{-4} = \frac{-32}{-4}$

$d = 8$

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

A $x = 8$

B $x = 10$

C $x = 12$

D $x = 14$

$\frac{3}{4}x - 8 = 1$, $+8 \quad +8$, $\frac{4}{3}\cdot\frac{3}{4}x = 9\left(\frac{4}{3}\right)$, $x = 12$

10 $8a = 20 + 6a$

$-6a \quad -6a$

$\frac{2a}{2} = \frac{20}{2}$

$a = 10$

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

$2x + 16 = 4x + 16$

$-2x \quad -2x$

$16 = 2x + 16$

$-16 \quad -16$

$\frac{0}{2} = \frac{2x}{2}$

If $0 = x$

then $x = 0$

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

$-3x \quad -3x$

$8 = 3x + 17$

$-17 \quad -17$

$\frac{-9}{3} = \frac{3x}{3}$

If $-3 = x$

then $x = -3$

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

A $x = -13$

B $x = -11$

C $x = 3$

D $x = 9$

$5x - 8 = 8x + 31$

$-5x \quad -5x$

$-8 = 3x + 31$

$-31 \quad -31$

$\frac{-39}{3} = \frac{3x}{3}$

If $-13 = x$

then $x = -13$

$8 \neq -3$ No Solut

$-3 = -3$ Many

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

$-12m \quad -12m$

$8 = 2m - 16$

$+16 \quad +16$

$\frac{24}{2} = \frac{2m}{2}$

If $12 = m$

then $m = 12$

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

$11 + 3x - 6 = 3x - 1$

$5 + 3x = 3x - 1$

$-3x \quad -3x$

$5 \neq -1$

No Solution

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

$2x - 10 = 4x - 10 - 2x$

$2x - 10 = 2x - 10$

$-2x \quad -2x$

$-10 = -10$

Infinitely Many Solutions

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

$2(A) = (\frac{1}{2}bh)2$

$\frac{2A}{h} = \frac{bh}{h}$

If $\frac{2A}{h} = b$

then $b = \frac{2A}{h}$

b.) Solve for h

$2(A) = (\frac{1}{2}bh)2$

$\frac{2A}{b} = \frac{bh}{b}$

If $\frac{2A}{b} = h$

then $h = \frac{2A}{b}$

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

a.) Solve for l

$\frac{p}{2} = \frac{2(l+w)}{2}$

$\frac{p}{2} = l + w$

$-w \quad -w$

$\frac{p}{2} - w = l$

b.) Solve for w

$\frac{p}{2} = \frac{2(l+w)}{2}$

$\frac{p}{2} = l + w$

$-l \quad -l$

$\frac{p}{2} - l = w$

19 Solve the following for x.

$mx - 3 = y$

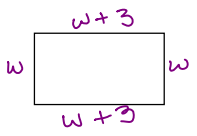
$+3 \quad +3$

$\frac{mx}{m} = \frac{y+3}{m}$

$x = \frac{y+3}{m}$

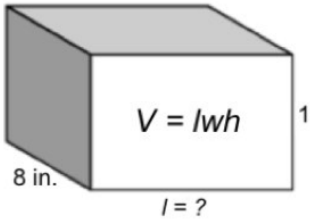
20 Kristy is making a rectangular quilt that is 3 feet longer than it is wide. If the perimeter of the quilts is to be 34 feet, what will be its dimensions?

A 3 ft by 8 ft
B 5 ft by 8 ft
C 7 ft by 4 ft
D 7 ft by 10 ft



$P = w + w + w + 3 + w + 3$
$34 = 4w + 6$
$-6 \quad -6$
$\frac{28}{4} = \frac{4w}{4}$
$7 = w$ = width
$10 = w + 3$ = length

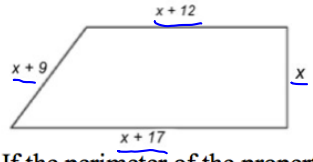
21 The volume of a rectangular solid is 960 cubic inches. The width is 8 inches and the height is 10 inches.



What is the length of the solid?

$V = lwh$
$960 = l(8)(10)$
$\frac{960}{80} = \frac{80l}{80}$
$12 = l$
$l = 12$

22 The dimensions of a trapezoid are pictured below.



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

$P = x + x + 9 + x + 12 + x + 17$
$82 = 4x + 38$
$-38 \quad -38$
$\frac{44}{4} = \frac{4x}{4}$
$11 = x$

SOLVING LINEAR INEQUALITIES

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

$m + 9 > 1$
$-9 \quad -9$
$m > -8$

24 Solve the inequality
$9 > p - 2$

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

$9 > p - 2$
$+2 \quad +2$
$11 > p$
If $11 > p$
then $p < 11$

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

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

$38 > 10 - 7v$
$-10 \quad -10$
$\frac{28}{-7} > \frac{-7v}{-7}$
If $-4 < v$
then $v > -4$

26 Solve the inequality & Graph it's solution on a number line.

$3(n+1) \le 2n+6$

$3n+3 \le 2n+6$

$-2n \quad -2n$

$n+3 \le 6$

$-3 \quad -3$

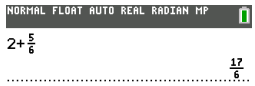
$n \le 3$

27 Solve the inequality

$b - \frac{5}{6} > 2$

$+\frac{5}{6} \quad +\frac{5}{6}$

$b > \frac{17}{6}$



28 Solve the inequality

$13x + 9 > 16x - 6$

$-16x \quad -16x$

$-3x + 9 > -6$

$-9 \quad -9$

$\frac{-3x}{-3} > \frac{-15}{-3}$

$x < 5$

29 Solve the inequality

$10r - 16 < 14r - 8$

(A) $r > -2$

B $r > 2$

C $r < 2$

D $r < -2$

$10r - 16 < 14r - 8$

$-10r \quad -10r$

$-16 < 4r - 8$

$+8 \quad +8$

$\frac{-8}{4} < \frac{4r}{4}$

If $-2 < r$

then $r > -2$

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: $-3x + 6 \ge 8$ Should be -6

Step 3: $-3x \ge 2$

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

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

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

(A) $3x + 6 - 7x \ge 7x - 4 - 7x$

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

(C) $3x + 6 - 6 \ge 7x - 4 - 6$

(D) $3x + 6 - 3x \ge 7x - 4 - 3x$

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

F $\frac{(3x+6)}{7} \ge \frac{(7x-4)}{7}$

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 $\frac{x}{75}$

B $75 - x$

C $75x$

D $\frac{75}{x}$

33 What is the value of the expression

$$\frac{x^y + z}{z} \Rightarrow \frac{2^3 + 4}{4} \Rightarrow \frac{8+4}{4} \Rightarrow \frac{12}{4} \Rightarrow 3$$

$x = 2$, $y = 3$ and $z = 4$

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

$5(x + 1) + 6(x + 2)$	Given
$5x + 5 + 6x + 12$	Distributive
$5x + 6x + 5 + 12$	Commutative of +
$(5x + 6x) + (5 + 12)$	Associative of +
$11x + 17$	Substitution