

Mrs Snow

Algebra 1 1st Six Weeks
Test #2 Review Worksheet
Show All Work!!!

AME

1) What is your goal when solving equations?

To find a solution for your variable

2) How do you move numbers to the other side of an equation when solving for x?

Use inverse operations: Add \leftrightarrow subtract
multiply \leftrightarrow divide } Inverse operations

3) What is the Golden Rule of solving equations?

What you do to the left side, you do to the right. You must keep an equation in balance.

Solve for 'x' No work = no credit!

4) $x + 15 = 26$
 $-15 \quad -15$

$x = 11$

5) $-4 = -b - 18$
 $+18 \quad +18$

$(-1) 14 = -b (-1)$

$14 = b$

6) $4m = -64$
 $\frac{4}{4} \quad \frac{4}{4}$

$m = -16$

7) $(7) \frac{x}{7} = 12 (7)$

$x = 84$

8) $(\frac{-3}{2}) \frac{-2}{3} x = 12 (\frac{-3}{2})$

$x = -18$

9) $2x + 10 = -8$
 $-10 \quad -10$

$\frac{2x}{2} = \frac{-18}{2}$

$x = -9$

10) $-3x - 10 = 6$
 $+10 \quad +10$

$\frac{-3x}{-3} = \frac{16}{-3}$

$x = \frac{-16}{3}$

11) $-10 = \frac{-g}{4} + 22$
 $-22 \quad 4 \quad -22$

$(-4) -32 = \frac{-g}{4} (-4)$

$128 = g$

12) $(-5) \frac{h+2}{-5} = -2 (-5)$

$\frac{h+2}{-2} = \frac{10}{-2}$

$h = 8$

13) $(-4) \frac{x+3}{-4} = \frac{5}{2} (-4) (-2)$

$\frac{x+3}{-3} = \frac{-10}{-3}$

$x = -13$

14) $\frac{4(2x+3)}{4} = \frac{-36}{4}$

$\frac{2x+3}{-3} = \frac{-9}{-3}$

$\frac{2x}{2} = \frac{-12}{2}$

$x = -6$

15) $15n - 12 - 5n = 8$

$\frac{10n - 12}{+12 \quad +12} = \frac{8}{+12}$

$\frac{10n}{10} = \frac{20}{10}$

$n = 2$

16) $3n - 8 = 29 + 2n$
 $-2n \quad -2n$

$n - 8 = 29$
 $+8 \quad +8$

$n = 37$

17) $-2(3x+5) = 4(x-6)$

$-6x - 10 = 4x - 24$
 $+6x \quad +6x$

$-10 = 10x - 24$
 $+24 \quad +24$

$\frac{14}{10} = \frac{10x}{10}$

$x = \frac{7}{5}$

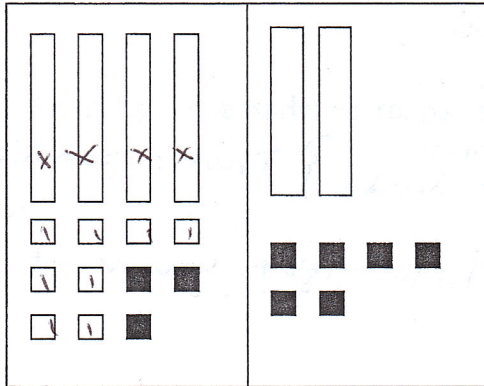
Write the next 2 terms in the pattern...

22) -1, 10, -5, 20, -25, 30, -125

23) 3, 9, 27, 81, 243

(□ 1 unit ■ -1 unit)

25)



a. Write the equation represented by the tiles.

$$\underline{4x + 8 - 3 = 2x - 6}$$

b. Solve the equation below...

$$4x + 8 - 3 = 2x - 6$$

$$4x + 5 = 2x - 6$$

$$-2x \quad -2x$$

$$2x + 5 = -6$$

$$-5 \quad -5$$

$$2x = -11$$

27) $10a - 3(4a + b) + 2(a - 7b)$

$$10a - 12a - 3b + 2a - 14b$$

$$\underline{-17b}$$

Simplify... (distribute or CLT)

26) $8x + 3x - (11 - 13) - 4x$

$$8x + 3x - (-2) - 4x$$

$$11x + 2 - 4x$$

$$\underline{7x + 2}$$

28) $-2(2x + 5) + (4x - 6x)$

$$-4x - 10 + 4x - 6x$$

$$\underline{-6x - 10}$$

29) $-20g + 7(3h + 3g) - 14h$

$$-20g + 21h + 21g - 14h$$

$$\underline{g + 7h}$$

32) The sum of 3 consecutive numbers is 57. What are the numbers?

Define your variable (unknown) $x = 1^{st}$ number

Write your equation here: $x + x + 1 + x + 2 = 57$ The 3 numbers are... 18, 19, 20

$$3x + 3 = 57$$

$$\frac{3x}{3} = \frac{54}{3} \quad x = 18$$

$$x = 18$$

$$x + 1 = 18 + 1$$

$$x + 2 = 18 + 2$$

34) Kelly is thinking of a number. Three less than 6 times a number is -45.

Define your variable (unknown) $n = \text{number}$

Write your equation here:

$$\underline{6n - 3 = -45}$$

$$+3 \quad +3$$

$$\frac{6n}{6} = \frac{-42}{6}$$

$$n = -7$$

Solve your equation to find the missing number. $n = -7$

36) Brandon mows lawns for \$10 per lawn and his parents give him \$40 per month for his allowance. Michael makes \$15 per lawn mowed and gets \$10 per month allowance.

for the expressions

Define a variable for the total money per month $n = \text{number of lawns}$

Write an expression describing what Brandon makes per month: $10n + 40$

Write an expression describing what Michael makes per month: $15n + 10$

Write an equation describing the number of lawns they each has to mow in order to make the same amount of money for one month $10n + 40 = 15n + 10$ Solve it below!!!

$$\begin{array}{r} 10n + 40 = 15n + 10 \\ -10n \quad -10n \\ \hline 40 = 5n + 10 \\ -10 \quad -10 \\ \hline 30 = 5n \\ \frac{30}{5} = \frac{5n}{5} \quad n = 6 \text{ lawns} \end{array}$$

How many lawns does Michael have to mow in order to catch up to Brandon? 6 lawns

37) Mr. Cotten's car broke down on the highway. Acme Towing charged \$50 just to come out plus \$30 for each mile they have to tow the car. If Mr. Cotten paid \$224 to tow the car all together, how many miles was it towed?

Define a variable $m = \text{mile}$ Final Answer 5.8 mile

Write your own equation:

$$\begin{array}{r} 50 + 30m = 224 \\ -50 \quad -50 \\ \hline 3m = 174 \\ \frac{3m}{3} = \frac{174}{3} \end{array}$$

Simplify and Solve:

$$m = 5.8 \text{ mile}$$

38) Mrs. Veazey sold her iPod on E-Bay for \$120.00. That was \$20 over one fourth of what she paid. How much did she originally pay? $X = \text{original price}$

$$\begin{array}{r} 120 = 20 + \frac{1}{4}X \\ -20 \quad -20 \\ \hline (4)120 = (4)\frac{1}{4}X \\ (4)120 = (4)\frac{1}{4}X \end{array}$$

$X = \$400 \text{ original price}$

39) The perimeter of a triangle is 82 feet. $P = S_1 + S_2 + S_3$

Write an equation that can be used to solve for x.

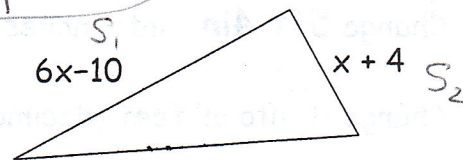
$$82 = (6x - 10) + (x + 4) + (3x - 2)$$

Solve your equation to find the value of x.

$$\begin{array}{r} 82 = 10x - 8 \\ + 8 \quad + 8 \\ \hline 90 = 10x \end{array}$$

$$\begin{array}{r} 90 = 10x \\ \frac{90}{10} = \frac{10x}{10} \quad X = 9 \end{array}$$

Find the length of each side. 44 13 25



$$S_1 = 6(9) - 10 = 44$$

$$S_2 = 9 + 4 = 13$$

$$S_3 = 3(9) - 2 = 25$$

Solve for the requested variable. Show your steps neatly!

40. $A = \frac{1}{2}bh$; solve for b

(2) $\frac{A}{h} = \frac{1}{2}b$

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

Vocabulary:

look in textbook \Rightarrow Glossary: p 5107 (back of book)

Solution:

Simplify:

Additive Inverse:

Multiplicative Inverse:

Isolate

Sum

Quotient

Difference

Change **5ft 4in** into inches 64 inches

Change it into all feet (decimal) 5.33 ft

Change it into all feet (mixed number) 5 $\frac{1}{3}$ ft

41. $\pi = \frac{c}{d}$; solve for d

(d) $\pi = \frac{c}{d}$ (d)

$d\pi = \frac{c}{\pi} \Rightarrow d = \frac{c}{\pi}$

42. $P = 2L + 2W$; solve for W

$\frac{P-2L}{2} = \frac{2W}{2}$

$\frac{P-2L}{2} = W$

These words you must understand and know the definitions.

convert ft \rightarrow in

$5\text{ft} \left(\frac{12\text{in}}{1\text{ft}}\right) = 60\text{in} + 4\text{in}$

$4\text{in} \left(\frac{1\text{ft}}{12\text{in}}\right) = \frac{4}{12} = \frac{1}{3}\text{ft}$

$5 + .33$