

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

Grade 7 Math  
Unit 6 Equations Test

Part A -- Multiple Choice

1. When  $z + z + z + z + z + z + z$  is simplified, it is:  
 (A)  $7z$  (B)  $7 + z$  (C)  $z$  (D)  $7(z + 1)$

$3 + 3 + 3 + 3 = 12$   
 or  $4 \times 3 = 12$

2. Which equation describes the following situation:  
 add 5 more than triple a number is 47 years old. What is the number?  
 (A)  $5x + 3 = 68$  (B)  $47 - 5x = 3$  (C)  $3x - 47 = 5$  (D)  $3x + 5 = 47$

$3x + 5 = 47$

3. What is the result of  $4x - 7$ , when  $x = 6$ ?  
 (A) 30 (B) 17 (C) 24 (D) 39

$4x - 7$   
 $4(6) - 7 = 17$

4. If  $G - 11 = 24$ , then  $G = ?$ :  
 (A) 13 (B) 24 (C) 24 (D) 35

5. Which equation is the same as ten more than four times a number is 30?  
 (A)  $4n + 10 = 30$  (B)  $4n - 10 = 30$  (C)  $10n + 4 = 30$  (D)  $30 - 10n = 4$

6. What is the difference between algebraic equation and algebraic expression?

has  
 $x + 4 = 7$   
 Equation

no equal  
 $3x - 2$   
 expression

0	-2
1	1
2	4
3	7

7. There were 3 packs of hockey cards on the table, 4 hockey cards are given away. If  $n$  = number of hockey cards and there are 41 hockey cards on the table, which equation satisfies the situation:

(A)  $n - 4 = 3$

(B)  $3n - 4 = 41$

(C)  $4n + 4 = 41$

(D)  $n = 45$

$3P - 4 = 41$

subtract

Part B – You must show work in order to obtain full value.

1. Solve the following using algebra:

(a)  $x + 12 = 18$

$x + 12 - 12 = 18 - 12$   
 $x = 6$

(b)  $p - 4 = 11$

$p - 4 + 4 = 11 + 4$   
 $p = 15$

(c)  $8r = 72$

$\frac{8r}{8} = \frac{72}{8}$   
 $r = 9$

(d)  $\frac{f}{4} = 7$

$4 \times \frac{f}{4} = 7 \times 4$   
 $f = 28$

d)  $10 + 3m = 31$

$10 + 3m - 10 = 31 - 10$   
 $3m = 21$   
 $\div 3 \quad \div 3$   
 $m = 7$

d)  $6n - 5 = 25$

$6n - 5 + 5 = 25 + 5$   
 $6n = 30$   
 $\frac{6n}{6} = \frac{30}{6}$   
 $n = 5$

e)  $\frac{t}{5} - 14 = 8$

$\frac{t}{5} - 14 + 14 = 8 + 14$   
 $\frac{t}{5} = 22$

$5 \times \frac{t}{5} = 22 \times 5$

$t = 110$

3. Henry is planning an event the cost of the food is  $8x$  for each person and he has to pay \$75 to rent a hall. The total cost of the event was \$443. How many people attended his event?

a) Define what the variable represents

$x \equiv$  # of people who attended event

b) Write an equation

$$8x + 75 = 443$$

c) THEN Solve the equation.

(SHOW ALL WORK and write a final sentence.)

$$8x + 75 - 75 = 443 - 75$$

$$8x = 368$$

$$\div 8 \quad \div 8$$

$$x = 46$$

46 people attended this event.

4) Write an equation for each sentence. THEN solve

a) nine more than three times a number is 45.

$$9 + 3n = 45$$

$$9 + 3n = 45 - 9$$

$$3n = 36$$

$$n = 12$$

B) Ryan baked cookies. He shared them among his 6 friends. Each friend had 5 cookies. Write, then solve, an equations to find how many cookies Ryan baked.

Share is divide

$$\frac{n}{6} = 5$$

Ryan had 30 Cookies.

$$6 \times \frac{n}{6} = 5 \times 6$$

$$n = 30$$

$$\frac{n}{6} = 30$$

$$1n = 30$$

$$n = 30$$

- c) Sam had 40 songs downloaded on her phone. Each month she downloads 6 additional songs. After how many months will Sam have a total of 94 songs?

$$6x + 40 = 94$$

$$6x + 40 - 40 = 94 - 40$$

$$6x = 54$$

$$\div 6 \quad \div 6$$

$$x = 9$$

After 9 months Sam will have 94 songs.

6. The cost of a school clothing is as follows: \$7 per hat and \$12 per t-shirt. The following is a formula for total cost.  $C = 7h + 12T$  where h represent the number of hats purchased and T represent the number of t-shirts purchased.
- Fill in the equation with the given information below and solve.

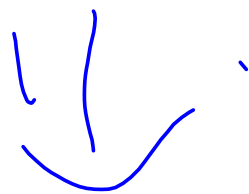
- a) What is the cost if you but 4 hats and 6 tshirts?

$$C = 7h + 12T$$

$$= 7(4) + 12(6)$$

$$28 + 72$$

$$C = 100$$



- B) Find out how many t-shirts bought if you spent a total of \$167 and bought 5 hats.

$$C = 7h + 12T$$

$$167 = 7(5) + 12T$$

$$167 = 35 + 12T$$

$$\frac{132}{12} = \frac{12T}{12}$$

$$T = 11$$

## Attachments

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