Math 009: beginning algebra online practice quiz.

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1. *Compute:* (a) $36 \div 3 \cdot 6 = 12 \cdot 6 =$ 72

   (b) $15 - 3 + 4 = 12 + 4 =$ 16

2. *Compute:* $19 - 6(12 - 5)^2 = 19 - 6(7)^2 = 19 - 6 \cdot 49 = 19 - 294 =$ -275

3. *Compute:* $4\{3+6[4-3(-2)]\}=4\{3+6[4+6]\}=4\{3+6 \cdot 10\}=4\{3+60\}=4 \cdot 63 =$ 252

4. a) What is the *associative* property of multiplication? Give an example of when the associative property is useful. In addition and multiplication; numbers may be grouped together differently , in the same problem, and you will still come out with the same result i.e. 3+(7+2)=12 or (3+7)+2=12

   b) What is the *distributive* property? Give an example of when the distributive property is useful. Multiplying a given number outside the parenthesis by each given value inside the parenthesis i.e. 5(x+4)= 5x + 20

5. *Simplify:* (a) $15x - 3y + 7y =$ 15x + 4y

   (b) $3(3x + 9) - 4(4x - 3) = 9x + 27 - 16x + 12 =$ -7x + 39

6. *Simplify:* $-4x + 3x + 6y + 2(5x - 4y + 9) = -4x+3x+6y+10x-8y+18=$ 9x–2y+18

7. For the expression:
   (a) Evaluate the expression $-4x + 3x + 6y + 2(5x - 4y + 9)$ for x = -2 and y = 3
   $-4(-2) + 3(-2) + 6(3) +10(-2) - 8(3) + 18 = 8+(-6)+18+(-20)+(-24)+18 =$ - 6

   (b) If the value of x is *increased* by 1 and the value of y is *decreased* by 1, what is the change in the value of the expression?
   $-4(-1)+3(-1)+6(2)+10(-1)-8(2)+18 = 4 -3 +12 -10 -16 +18 =$ 5

8. *Translate into mathematical notation:*
   (a) Sixteen less than a number x - 16

   (b) The quotient of a number and seven $\frac{x}{7}$

9. *Translate into mathematical notation:* the product of eight and the difference of a number and nine 8(x – 9) = 8x - 72

10. *Translate into mathematical notation:* five times the sum of twice the square of a number and seven $5(2x^2 + 7) = 10x^2 + 35$

11. *Solve:* $-3x + 15 = -60$

$-15 \quad -15$

$3x = -75$

$3x \quad 3x$

$x = 25$

12. *Solve:* $7x + 3 = 4x - 27$

$-3 \quad -3$

$7x = 4x - 30$

$-4 \quad -4$

$3x = -30$

$3x \quad 3x$

$x = -10$

13. *Solve:* $3(2x - 5) + 4(3x + 8) = 27 \;/\; 6x - 15 + 12x + 32 = 27 \;/\; 18x + 17 = 27$

$-17 \quad -17$

$18x = 10$

$18x \quad 18x$

$x = \frac{5}{9}$

14. *Solve:* $1.3x - 2.42 = 6.32$

$+2.42 \quad +2.42$

$1.3x = 8.74$

$1.3x \quad 1.3x$

$x = 6.72$

15. *Solve:* $4x + 7 = 9x$

$-4x \quad -4x$

$7 = 5x$

$5x \quad 5x$

$x = 1\frac{2}{5}$

16. *Solve:* $3 - 4(2 - 3x) = 6x + 3 \;/\; 3 - 8 + 12x = 6x + 3 \;/\; -5 + 12x = 6x + 3$

$+5 \quad +5$

$12x = 6x + 8$

$-6x \quad -6x$

$6x = 8$

$6x \quad 6x$

$x = 1\frac{1}{3}$

17. *Solve:* $\frac{^{40}5}{8}x + \frac{^{40}3}{4} = \frac{^{40}1}{2}x + \frac{^{40}1}{5} = 25x + 30 = 20x + 8$

$-8 \quad -8$

$25x + 22 = 20x$

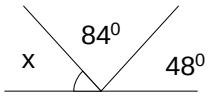
$-25 \quad -25$

$22 = -5x$

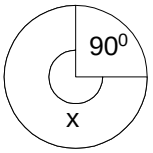
$-5x \quad -5x$

$x = -4\frac{2}{5}$

18. Find the angles labeled x:

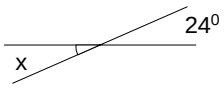
a) 

48°

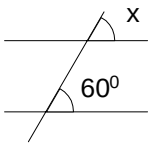
b) 

270°

19. Find the angles labeled x:

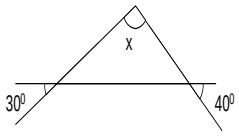
a) 

24°

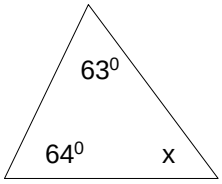
b) 

60°

20. Find the angles labeled x:

a) 

110°

b) 

53°

21. Barry orders steak and fries for $8.90. He drinks four sodas during his meal. His bill was $13.50. How much was each soda?

$13.50 - $ 8.90 = $ 4.60

$4\overline{)4.60}$ = $1.15 for each soda

22. Jennifer's piggy bank contains 132 coins, all nickels, dimes, and quarters. If there are three times as many nickels as dimes, and 28 less quarters than dimes, how many of each type of coin are there?

$3x = n$

$x = d$

$+ x - 28 = q$

$5x - 28 = 132$

$5x - 28 = 132$

$+28 \quad +28$

$\frac{5x = 160}{5 \quad 5}$

x = 32

96 nickels
32 Dimes
4 quarters

23. Two thirds of the passengers on an early morning flight were traveling on business. One fifth of the plane was empty. Find the capacity of the plane if there were 160 business travelers on board.

$\frac{(\frac{2}{3})x = 160}{(\frac{2}{3})x \quad (\frac{2}{3})x}$ x = 240 passengers on board

$\frac{(\frac{4}{5})c = 240}{(\frac{4}{5})c \quad (\frac{4}{5})c}$ c = 300, total number of seat on board