Math problems, 1-8 - Dillon Regular

1. Simplify using BEDMAS 9 +(12 ÷ 6)2 + (2 ×–9)–5

9+(2)2 + (-18) - 5
9+4 + (-18) - 5
13 - 18 - 5
-5-5
10

2. Simplify using BEDMAS   ((28 + 7) / (-7(5-6)^2) - 1

(35/-7) - 1
-5-1
-6

3. Simplify using BEDMAS ((4 + 3) × 4)–5 + ((7–4)2 / 3) + 1

(7*4)-5+((9)/3)+1
(28)-5+(3)+1
23+3+1
27

4. Calculate each: 38.63 + 14.2 =52.8   230× 2.465 = 566.95   13.2 / 4.8=2.75

5. Solve for the subject in ():   Y = mx + c   (m)

(y-c)/x = (mx)/x
(y-c)/x = x

6. Solve for the subject in ():   y /P + a = b (P)

(y/P) = b-a
(y/P)/(y/1) = y/(b-a)
P=y/(b-a)

7. Solve for the subject in ():   2(x + 3) – 3(y + 2) = 4xy   (x)

2x+6-4xy-3y-6=0
2x-4xy-3y = 0
x(2-4y) = 3y
x = 3y/(2-4y)

8. Solve for the subject in (): $S = uf + \frac{1}{2} at^2$ (t)

$S - uf = 1/2at^2$

$2(S-uf) = at^2$

$(2(S-uf))/a = t^2$

$\sqrt{(2(S-uf))}/a = t$

9. A student worked 3.5 hours on Friday evening, 5 hours on Saturday and 6.5 hours on Sunday. How much will they earn if they are paid $12.50 per hour?

    Earnings on Friday = 3.5 hours * $12.50/hour = $43.75
    Earnings on Saturday = 5 hours * $12.50/hour = $62.50
    Earnings on Sunday = 6.5 hours * $12.50/hour = $81.25

Total earnings = $43.75 + $62.50 + $81.25 20 = $187.50

10. George purchased 5.5 yards of brown upholstery material, and 7.75 yards of maroon material. If he used 3.25 yards on a project, how much material does he have left?

    Total material purchased = 5.5 yards + 7.75 yards = 13.25 yards

Amount of material left = 13.25 yards - 3.25 yards = 10 yards

11. The Miller family estimate that they spend $475 a month on food. This amount represents 12% of their total budget. What is the amount of their total budget?

    If $475 is 12% from the total budget then we can introduce a variable X that represents
the whole budget.
Then $475 = X * 0.12; which means that X = 475/0.12; X = 3,958.33

The total budget is $3,958.33

12. The renovation budget for the front of a house is $18,000.00. If you spend 9% on shrubs and flowers, how much of the budget is used?

    9% of 18,000 = 0.09 * 18,000 = 1,620
    The leftover amount is 18,000 - 1,620 = $16,380

13. A store clerk sold a pair of skies to a customer. The skies had a retail price of $219.95. The clerk made up a sales slip that included 15% HST. What is the final amount paid?

    The total amount paid is $219.95 * 1.15 = $252.94

14. Bacteria in a water sample increased from 2.6 ppm (parts per million) to 2.9 ppm. What is the percent increase in bacteria?

    The Increase in ppm is 2.9 - 2.6 = 0.3 ppm
    Denominator is 0.3/2.6 = 0.115

    The increase 0.115 * 100 = 11.5%

15. Your company has a large container of fuel. You have used 320 gallons of the 1600 total gallons. What percentage of the fuel remains?

0

Denominator 320/1600 = 0.2
The percentage of fuel left = 100% - 0.2 * 100 = 100% - 20% = 80%

16. A company offers a safety harness for $345.00 (HST included). What is the actual cost of the harness, and what is the cost of the tax (15%)?
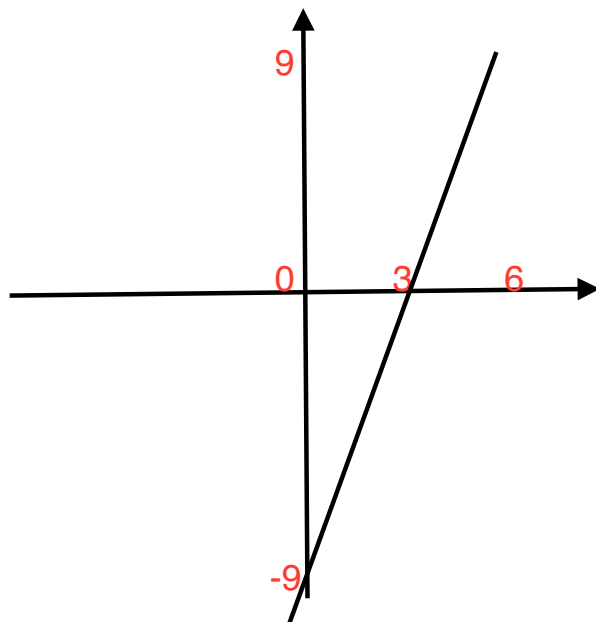
HST is 345 * 0.15 = $51.75
Actual cost of Harness is 345 - 51.75 = $293.25

19. Graph each of the following functions. Use a table like the one provided.

- $y = 3x - 9$

- $5x + 2y = 12$

- $y = -.5x^2 - 3x + 5$
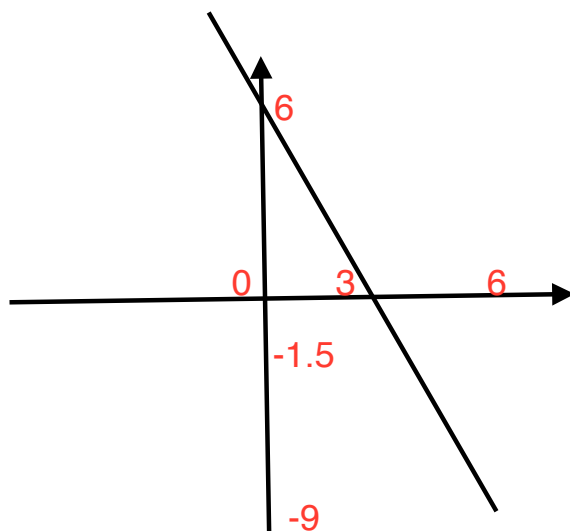
- $y = \sqrt{(3x-4)} - 2$

$y = 3x - 9$

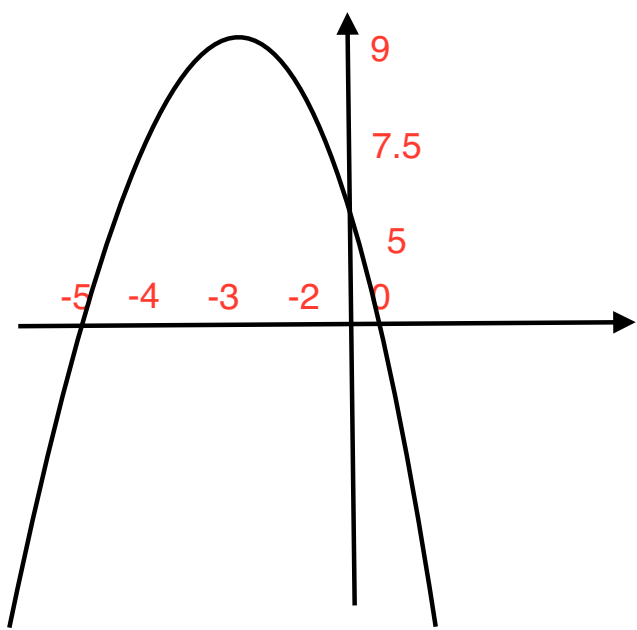| Domain	Range
X	Y
0	-9
3	0
6	9

5x +2y=12

Domain	Range
X	Y
0	6
3	-1.5
6	-9

$y = -.5x^2 -3x +5$

Domain	Range
X	Y
-5	7.5
-4	9

-3	9.5
-2	9
0	5

$y = \sqrt{(3x-4)} -2$

Domain	Range
X	Y
1.33	-2
2	-0.59
3	0.24
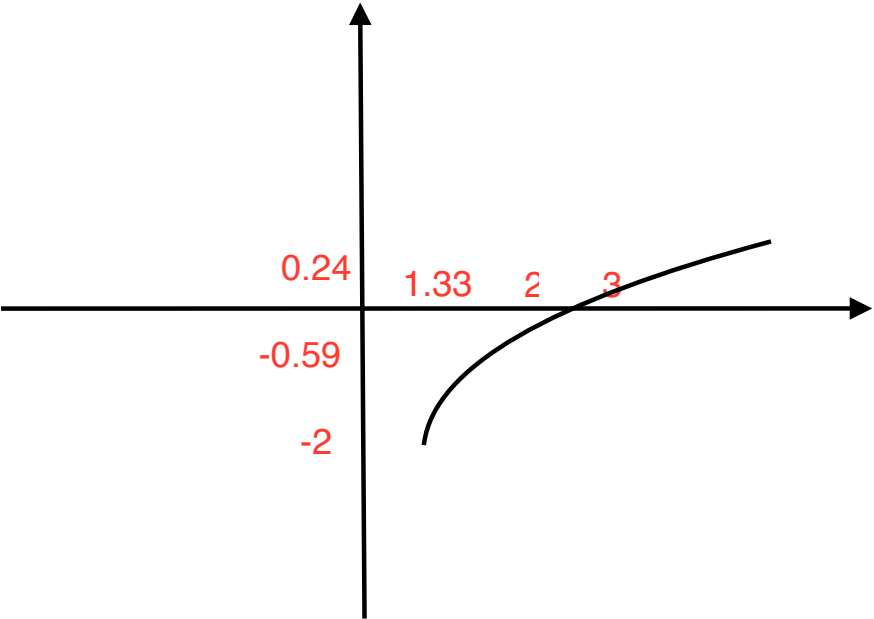
17. If the price of a tester decreased from $60 to $36, what is the percent decrease in the cost?

Difference in cost = Initial price - Final price

Difference = $60 - $36 = $24

Percent decrease = (Difference / Initial price) * 100

 Percent decrease = ($24 / $60) * 100 = 40%

the percent decrease in the cost is 40%.

18. A camera is on sale for 25% off at a price of $224.96. What was the original price of the camera rounded to the nearest $0.95?

 Sale price = $224.96 Discount = 25% = 0.25

Original price = Sale price / (1 - Discount)

Original price = $224.96 / (1 - 0.25)

 Original price ≈ $299.95

the original price of the camera, rounded to the nearest $0.95, is approximately $299.95.

What will the customer pay in total with HST of 15%?

 HST = Sale price * (HST rate / 100)

HST = $224.96 * (15 / 100) HST = $33.74

 Total amount paid = Sale price + HST

 Total amount paid = $224.96 + $33.74

Total amount paid ≈ $258.70

the customer will pay approximately $258.70 in total with the 15% HST included.

20.

math.sqrt(x): returns the square root of the given number 'x'. It is useful when you need to calculate square roots.

Example- calculate the square root of 121 -

result = math.sqrt(121)

print(result)   Output: 11.00

math.sin(x): returns the sine of the given angle 'x' (in radians). It is useful for trigonometric calculations.

Example- calculate the sine of 30 degrees. -

angle = math.radians(30)

result = math.sin(30)

print(result) Output: 11.00

math.pow(x, y): returns the value of 'x' raised to the power of 'y'. It is useful for calculating exponential values.

Example- raise x to the y. -

result = math.pow(2, 3)

print(result) # Output: 8.0

math.ceil(x): returns the smallest integer greater than or equal to 'x'. It is useful when you want to round up a floating-point number (whole number)

Example- round decimal up to nearest whole number-

result = math.ceil(3.2)

print(result) # Output: 4