

Get out your homework and have it ready to check. Target Check on writing equations on tomorrow!

## Classwork - Writing Equations from a Situation

1) Ashley bought a book for \$12.75 and 4 notebooks. Create and solve an equation to find the cost of each individual notebook if she spent a total of \$19.35

Define variable:

$$\text{cost of notebook} = c$$

Notebooks cost  
\$1.65

$$\begin{aligned} 4c + 12.75 &= \text{Total Cost} \\ 4c + 12.75 &= 19.35 \\ -12.75 & \quad -12.75 \\ \hline 4c &= 6.6 \\ \frac{4}{4} & \quad \frac{6.6}{4} \\ c &= 1.65 \end{aligned}$$

2) Shamrock Taxi service charges a one-time \$2.50 charge, then \$3.60 cost per each mile. Create and solve an equation to show the number of miles it will take for the total cost of the ride to be \$24.10.

Define variable:

$$\# \text{ of miles} = m$$

$$\begin{aligned} 3.60m + 2.50 &= \text{Total Cost} \\ 3.60m + 2.50 &= 24.10 \\ -2.50 & \quad -2.50 \\ \hline 3.60m &= 21.6 \\ \frac{3.60}{3.6} & \quad \frac{21.6}{3.6} \\ m &= 6 \text{ miles} \end{aligned}$$

3) The high temperature for the day is  $28^{\circ}\text{F}$ . After reaching the high temperature for the day, the temperature begins to decrease by  $3^{\circ}\text{F}$  every hour. Create and solve an equation to show the number of hours it will take for the temperature to reach the day's low temperature of  $-2^{\circ}\text{F}$ .

Define variable:

$$\underline{\text{\# of hours}} = \underline{h}$$

$$28 - 3h = -2 \text{ OR}$$

$$\frac{-3h + 28}{-3h + 28} = \text{Temperature}$$

$$\frac{-3h + 28}{-28} = \frac{-2}{-28}$$

$$\frac{-3h}{-3} = \frac{-30}{-3}$$

$$h = 10 \text{ hours}$$

1) The Kline family and Moore family live right next to each other and are going on a vacation together. The Moore family leaves for vacation early and have a **200** mile head start on the Kline's. Use the information below answer the following questions and graph each family's graph.

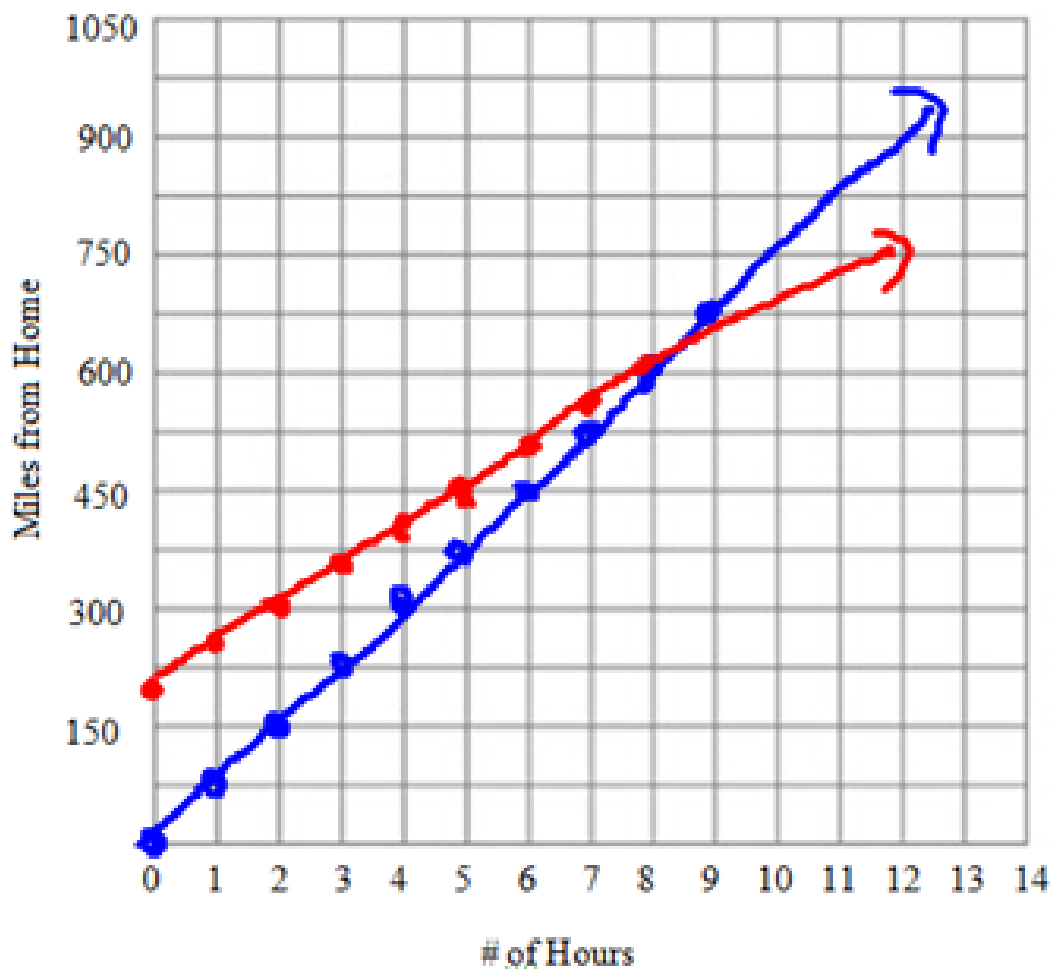
A) The Kline family is starting from home and travel a speed of 75 miles per hour.

$$75h = \text{Miles from home}$$

B) The Moore family is already **200** miles from their house and are traveling **50** miles per hour.

$$200 + 50h = \text{Miles from home}$$

Define Variable  $\rightarrow$  h = hours



Kline Family Table

Hours	Miles from Home
0	0
1	75
2	150
3	225
4	300
5	375
6	450
7	525
8	600
9	675
10	750
11	825
12	900

Moore Family Table

Hours	Miles from Home
0	200
1	250
2	300
3	350
4	400
5	450
6	500
7	550
8	600
9	650
10	700
11	750
12	800

C) If the destination the two families are traveling to is 1200 miles away from their houses, how long does it take each family to get to the destination? Create and solve an equation.

Kline Family

$$\frac{75h = 1200}{75 \quad 75}$$

$$h = 16 \text{ hours}$$

Moore Family

$$\frac{200 + 50h = 1200}{-200 \quad -200}$$

$$\frac{50h = 1000}{50 \quad 50}$$

$$h = 20 \text{ hours}$$

2) Jared is reading a book and has already read 56 pages. He then reads 15 pages every day. Create and solve an equation to show the number of days it will take him to read the entire book if it is 341 pages.

Define variable:

$$\underline{\text{\# of days} = d}$$

$$\underline{15d + 56} = \text{Total Pages}$$

$$15d + 56 = 341$$

$$\underline{-56 \quad -56}$$

$$d = 19 \text{ days}$$

$$\frac{15d = 285}{15 \quad 15}$$

3) A diver is 15 meters below the surface of the water. The diver then begins to descend at a rate of 1.5 meters per second. Create and solve an equation to show how many seconds it took diver to reach 33 meters below the surface of the water.

Define variable:

$$\underline{\text{seconds}} = \underline{s}$$

$$\underline{-15 - 1.5s} = \text{Depth}$$

$$\begin{array}{r} -15 - 1.5s = -33 \\ +15 \qquad \qquad +15 \end{array}$$

$$\begin{array}{r} -1.5s = -18 \\ \underline{-1.5} \qquad \underline{-1.5} \end{array}$$

$$s = 12 \text{ seconds}$$

4) Your parents give you \$40 for you to buy lunch. Every day you spend \$3.50 on lunch. Create and solve an equation to find the number of days you bought lunch if you have \$8.50 left.

Define variable:

$$\underline{\# \text{ of days}} = \underline{d}$$

$$\begin{array}{r} 40 - 3.50d = \text{Money Left} \end{array}$$

$$\begin{array}{r} +40 - 3.50d = 8.50 \\ -40 \qquad \qquad -40 \end{array}$$

$$\begin{array}{r} -3.50d = -31.50 \\ \underline{-3.50} \qquad \underline{-3.50} \end{array}$$

$$d = 9 \text{ days}$$

5) You and your 3 friends find some money laying on the ground. You decide to split the money evenly and each person gets \$8.25. Create and solve an equation to find the total amount of money you found.

Define variable:

$$\underline{\text{total money}} = \underline{m}$$

$$\begin{array}{r} \frac{43}{4} = \$ \text{ Each Friend Got} \\ 4 \cdot \frac{m}{4} = 8.25 \cdot 4 \\ m = \$33 \end{array}$$