# Math 115 Practice Part 2 Answers

1. Discounted price is $135
   Sales tax is $12.49 (round to nearest cent)
   Total Price is **$147.49**

2. $11 - 3.5x \geq 16 - 4.75x$

   $-11 \qquad -11$

   $-3.5x \geq 5 - 4.75x$

   $+4.75x \qquad +4.75x$

   $1.25x \geq 5$

   $\frac{1.25x}{1.25} \geq \frac{5}{1.25} = 4$

   $x \geq 4$

   **$\{x \mid x \geq 4\}$**

3. When the trains meet they will have travelled the same distance.
   Let $t$ = the time for the first train. in hours

   $d = rt = 60t = 75(t-1)$

   The second train travelled 1 hour less

3. continued

$$60t = 75(t-1)$$

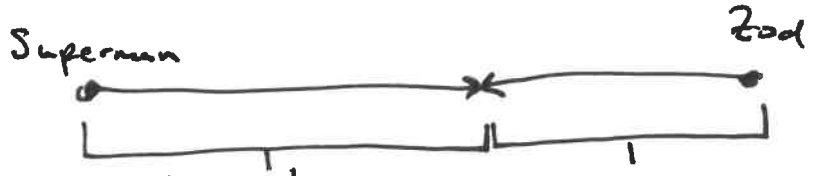
$$60t = 75t - 75$$

$$75 = 15t$$

$$\frac{75}{15} = \frac{15t}{15} \Rightarrow t = 5$$

5 hours

4.




$d_1 = r_1 t = 3000t$

$d_2 = r_2 t = 2500t$

Total distance is

$$3000t + 2500t = 4125$$

$$\Rightarrow 5500t = 4125$$

$$\Rightarrow t = \frac{4125}{5500} = \frac{3}{4}$$

$\frac{3}{4}$ hour or 45 minutes

5.

| Grade | Units |
|---|---|
| A (4) | 5 |
| B (3) | 4 |
| C (2) | 1 |

Weighted average:

$$\frac{x_1w_1 + x_2w_2 + x_3w_3}{w_1 + w_2 + w_3}$$

$$\frac{4.5 + 3.4 + 2.1}{5+4+1}$$

$$= \frac{20+12+2}{10} = \frac{34}{10} = 3.4$$

6. Slope of line $x-2y = 17.84$ is $1/2$ because

$$x-2y=17.84 \Rightarrow -2y = -x + 17.84 \Rightarrow y = \frac{-1}{-2}x + \frac{17.84}{-2}$$

($\frac{-1}{-2}$ ↑ slope.)

Any line parallel to this one has the same slope, $\frac{1}{2}$.

Use ~~Slope~~ Point-Slope Formula.

$$y-(-1) = \tfrac{1}{2}(x-2)$$

$$\Rightarrow y+1 = \tfrac{1}{2}x - 1$$

$$\Rightarrow \boxed{y = \tfrac{1}{2}x - 2}$$

7. $25\,mL = 25\,mL \cdot \frac{1\,L}{1000\,mL}$

$= \frac{25}{1000}\,L = 0.025\,L$

8. $0.45\,L = 0.45\,L \cdot \frac{1000\,mL}{1\,L}$

$= 450\,mL$

9. Let $D$ = # of dimes; $Q$ = # quarters

The amount of money he has is

$0.10D + 0.25Q = 9.00$

↓ But $D = 2Q$ "twice as many dimes..."

$0.10(2Q) + 0.25Q = 9.00$

$0.20Q + 0.25Q = 9.00$

$0.45Q = 9.00$

$Q = \frac{9.00}{0.45} = \frac{900}{45} = 20$

20 Quarters, 40 Dimes

10. $$\frac{75\% + X}{2} \geq 82\%$$

This is the average of the two test scores

2. $$\frac{0.75 + X}{2} \geq 0.82 \cdot 2$$

$$0.75 + X \geq 1.64$$

$$X \geq 0.89$$

$$\begin{array}{r} 1.64 \\ -0.75 \\ \hline .89 \end{array}$$

Bubba needs to score at least 89%.

11. $$\frac{96\% + 90\% + X}{3} \geq 90\%$$

average of 3 scores

$$\frac{186\% + X}{3} \geq 90\% \Rightarrow \frac{1.86 + X}{3} \geq 0.90$$

$$1.86 + X \geq 2.70 \Rightarrow X \geq 2.70 - 1.86 = 0.84$$

Ms. Plus must score at least 84%

12. Let $C$ = CEO salary, $E$ = an employee's salary

So

$$C \geq 1000 + 2 \cdot E$$

a) If $E = 30000$ then

$$C \geq 1000 + 2 \cdot 30000 = 1000 + 60000 = 61000$$

At least \$61,000

b) If $C = 90000$ then

$$90000 \geq 1000 + 2 \cdot E$$

$$89000 \geq 2 \cdot E$$

$$\frac{89000}{2} \geq E$$

half of \$89,000 is \$44,500

Employees earn at most \$44,500.