

## Math 70 Quiz #8

1. Using the equation  $Distance = Rate(Time)$ , we have that

$$Distance = (1.3 \frac{\text{ft}}{\text{min}})(30 \text{ min}) = 39 \text{ feet.}$$

So, Herbie can travel 39 feet in 30 minutes.

2. (a) Equation: Adding all the side lengths:  $W + W + 2W - 1 + 2W - 1 = 13$

$$\Rightarrow 6W - 2 = 13$$

$$\Rightarrow 6W = 15$$

$$\Rightarrow W = \frac{15}{6} = \frac{5}{2} \text{ OR } 2.5$$

The width is 2.5 inches and the length is 4 inches.

- (b) Unknowns: Number of movies with Timothy =  $t$   
Number of movies with Sean =  $3t$   
Number of movies with Roger =  $t + 5$

Equation:	Number of Sean C. movies	+	Number of Roger M. movies	+	Number of Timothy D. movies	= 15
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$$3t + t + 5 + t = 15$$

$$\Rightarrow 3t + t + 5 + t = 15$$

$$5t + 5 = 15$$

$$5t = 10 \quad (\text{Subtract 5 from both sides.})$$

$$t = 2 \quad (\text{Divide both sides by 5.})$$

So, Timothy Dalton starred in 2 Bond movies. Sean Connery starred in 6, and Roger Moore starred in 7.

3. (a)  $(4^8)(4^5) = 4^{8+5} = \boxed{4^{13}}$  (Using the product rule for exponents)

(b)  $(2x^3y)(4y^4)(-x^2) = (2 \cdot 4 \cdot -1)(x^3 \cdot x^2)(y \cdot y^4) = \boxed{-8x^5y^5}$

$$\text{since } x^3 \cdot x^2 = x^{3+2} = x^5 \quad \text{and} \quad y \cdot y^4 = y^1 \cdot y^4 = y^{1+4} = y^5$$