

Math 70 Quiz #8 Solutions

1. Unknown: Third Game Score = x

Equation: Average of three games = 200

$$\Rightarrow \frac{180+195+x}{3} = 200$$

$$\Rightarrow \frac{375+x}{3} = 200$$

To solve this equation, you can multiply both sides by 3. $3\left(\frac{375+x}{3}\right) = 3(200)$

$$375 + x = 600$$

$$\Rightarrow x = 225 \quad (\text{Subtract 375 from both sides.})$$

So, you would need to get a score of 225 to get an average of 200 for all three games.

2. 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

$$3t + t + 5 + t = 15$$

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

$$5t + 5 = 15$$

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

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

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

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

$$(b) (2x^3y)(4y^4)(x^2) = (2 \cdot 4)(x^3 \cdot x^2)(y \cdot y^4) = 8x^5y^5$$

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