

Instructions: Show all work. Partial credit can only be given where work is shown. Be sure to answer all parts of each question. You may not use a calculator on this quiz.

1. Solve the proportions for the variable.

a. $\frac{3}{4} : 8 = 9 : x$

$$\frac{4}{4} \cdot \frac{3}{8} = \frac{9}{x} \Rightarrow \frac{3}{3} \cdot \frac{3}{32} = \frac{9}{x} \Rightarrow \frac{9}{96} = \frac{9}{x}$$

$$\boxed{x = 96}$$

b. $\frac{15}{32} = \frac{x}{x+2}$

$$15(x+2) = 32x$$

$$15x + 30 = 32x$$

$$30 = 17x$$

$$\boxed{x = \frac{30}{17}}$$

2. A farmer calculates that for every 100 seeds he plants, he harvests 84 ears of corn. If he wants to harvest 7200 ears, how many seeds should he plant?

$$\frac{84}{100} = \frac{7200}{x} \Rightarrow \frac{84x}{84} = \frac{720,000}{84}$$

$$x = \frac{60,000}{7} \approx 8571.428$$

$$\approx 8572$$

3. 7.5 is what percent of 20?

$$\frac{7.5}{20} = \frac{x}{100} \Rightarrow 750 = 20x$$

$$x = 37.5\%$$

4. Complete the table.

	Fraction	Decimal	Percent
a.	$\frac{1}{5}$	0.2	20%
b.	$\frac{1}{250}$	0.004	0.4%
c.	$\frac{13}{400}$	0.0325	3.25%

5. An iPod is on sale for \$159.20 and the normal price is \$199. What is the discount being applied?

$$199(1-x) = 159.20$$

$$199 - 199x = 159.20$$

$$-199x = -39.80$$

$$x = 0.2 \sim 20\%$$

Check: $199 * .2 = 39.8$

$$199 - 39.8 = 159.20$$

