Name:
Scarsdale Middle School | Popham House | Date: Mr. Weiss

Quiz Percents – Level One

(1-2) Multiple Choice. Circle the letter of your answer.

1) Which equation would be used to find 9% of 750?

(A) (.09)(750) = x (B) (.9)(750) = x (C) (.09)x = 750 (D) (.9)x = 750

2) In order to make a profit on a coat she is going to sell, a storeowner prices the coat 15% higher than her cost. This results in a selling price of $207. If x represents her cost, which equation could be used to find x?

A) 207 = .15x B) 207 = .85x C) x = .85(207) D) 207 = 1.15x

3) 140 is what percent of 40?

$\frac{140}{40} = \frac{x}{100}$

$40x = 14,000$

$x = 350$

350%

4) 16% of the people surveyed stated that they dislike their job. If 48 people stated that they dislike their job, how many people were surveyed?

48 is 16% of what #?

$48 = .16x$

$300 = x$

$\frac{16}{100} = \frac{48}{x}$

$16x = 4800$

$x = 300$

300 people

5) A school faculty is 25% male. If there are 60 female faculty members, how many faculty members are there in all?

60 is 75% of what #? **80**

$60 = .75x$

$80 = x$

$\frac{75}{100} = \frac{60}{x}$

$75x = 6000$ $x = 80$

6) From last year, a population of a town increased from 2500 to 3000. What is the percent increase?

$\frac{\text{difference}}{\text{original}} = \frac{x}{100}$

$\frac{500}{2500} = \frac{x}{100}$

20%

7) After adding 15% tax, the cost of a hotel room is $195.50. What was the cost of the hotel room before the tax was added?

195.50 is 115% of what #?

$195.5 = 1.15x$

$170 = x$

$\frac{115}{100} = \frac{195.5}{x}$

$115x = 19550$

$x = 170$

$170

8) Ken bought a shirt during a 40% off sale. The regular price of shirt was $80. Sales tax of 6.5% is then added to the sale price to determine the final cost. What is the final cost of the shirt?

$80(.6)(1.065)$

$= \$51.12$

60% of 80

$\frac{60}{100} = \frac{x}{80}$

$x = \$48$

6.5% of $48

$= \$3.12$

48.00

+ 3.12

$51.12

9) The price of a share of stock increased 40%. It then decreased 15%. Resulting in a price of $178.50 per share. What was the price of the stock before the two changes?

$x(1.4)(.85) = 178.5$

$x(1.19) = 178.5$

$x = \boxed{\$150}$

10) There are 180 7th-graders in a school. There are 220 8th-graders in the school. 20% of the 7th graders and 40% of the eighth graders are on a modified sports team. What percentage of the combined 7th and 8th grade play modified sports?

7th grade: 20% of 180; $.2(180) = 36$

8th grade: 40% of 220; $.4(220) = 88$

whole school: $\frac{124}{400} = \frac{x}{100}$

$400x = 12400$

$x = 31$

$\boxed{31\%}$

11) A woman earns $50,000 per year before paying a percentage of her income in taxes. If after 5 years she has paid a total of $75,000 in taxes, by what rate is her yearly income taxed?

$\frac{75,000 \text{ TOTAL TAXES}}{5 \text{ years}} = \$15,000 \text{ per year}$

$\frac{15,000}{50,000} = \frac{x}{100}$

$x = 30$

$\boxed{30\%}$

Bonus 1) Max got a 10% raise in salary and now earns \$302.50. His payroll department determined that this was a mistake and that he should have received a 15% increase in salary. What is his correct new salary?

$1.1x = 302.5$

$x = 275$

$1.15(275)$

$= \boxed{\$316.25}$

Bonus 2) To pay for her first year of college, Julie got 24% of her tuition given as a scholarship. She paid 70% of the remaining tuition using savings. That left \$11,400 which she took out in loans. Find the total tuition.

$.24x + .7(.76x) + 11{,}400 = x$

$.24x + .532x + 11{,}400 = x$

$.772x + 11{,}400 = x$

$11{,}400 = .228x$

$x = \boxed{\$50{,}000}$

Bonus 3) A train left a station at 8:00 am and arrived at its destination 300 miles away at 12:00 pm. If it had increased its average rate of speed by 20%, what time would it have arrived?

$R \cdot T = D$

$R \cdot 4 = 300$

$R = 75$ mph

$75(1.2) = 90$ mph

$R \cdot T = D$

$90 \cdot T = 300$

$T = 3\frac{1}{3}$

$= 3$ hrs, 20 MIN

$\boxed{11:20 \text{ AM}}$