Quiz 3 on Decimals, Ratios, Rates, Proportions, and Percentages

1) Write 25.237 in words. twenty-five and two hundred thirty-seven thousand**ths**	2) Round .548 to the nearest A) tenth __.5__ B) hundredth __.55__	3) 85.74 + 3.9 + 158.2 = 1 1 85.74 3.90 + 158.20 247.84
4) Write one dollar and twenty-seven cents as a decimal. __$1.27__	5) 78.4 - 6.49 = 7 13 10 78.40 - 6.49 71.91	6) (47.24)(2.5) = 47.24 x 2.5 23620 9448 118.100
7) 9.378 ÷ .9 = 1 0.4 2 .9.$\overline{)9.3\,7\,8}$ $\underline{9}$ 0 3 $\underline{0\,0}$ 3 7 $\underline{3\,6}$ 1 8 $\underline{1\,8}$ 0	8) 36 ÷ .06 = 6 0 0. .06.$\overline{)3\,6.0\,0}$ $\underline{3\,6}$ 0 0 $\underline{0\,0}$ 0 0 $\underline{0\,0}$ 0	9) Express 5/2 as a decimal. 2.5 2$\overline{)5.0}$ $\underline{4}$ 1 0 $\underline{1\,0}$ 0
10) Bill paid $39.90 for two dress shirts. What did he pay for each shirt? $$$1 9 . 9 5 2$\overline{)\$3\,9\,.\,9\,0}$ $\underline{2}$ 1 9 $\underline{1\,8}$ 1 9 $\underline{1\,\,8}$ 1 0 $\underline{1\,0}$ 0	11) Write a ratio expressing that 12 students out of 14 passed a test. 12 to 14 = 6 to 7 12:14 = 6:7 $\frac{12}{14} = \frac{6}{7}$	12) Write $2.75 to 25 cents as a ratio. $\frac{\$2.75}{\$.25} = \frac{11}{1}$ 11 to 1 or 11:1

13) One of your friends studies for 2 hours every weekend and practices sports for 3 hours every weekend. Write a ratio of hours spent on sports to hours spent studying. $$\frac{\text{sports}}{\text{studying}} = \frac{3}{2}$$	14) A plane made the 4,400-mile trip across the Atlantic Ocean in 8 hours. What rate of speed was the plane flying? $$\text{average speed} = \frac{\text{miles}}{\text{hour}}$$ $$= \frac{4,400 \text{ miles}}{8 \text{ hours}}$$ $$= 550 \text{ MPH}$$
15) Mary earns $18 per day and saves $8 of the money. Saving at the same rate, how much would she save in a week that she earned $90? $$\frac{\$18}{\$90} = \frac{\$8}{x}$$ $$(18)(x) = (90)(8)$$ $$18x = 720$$ $$x = \$40$$	16) Express 4/5 as a percentage. $$\frac{4}{5} \times \frac{100\%}{1}$$ $$= \frac{400\%}{5}$$ $$= 80\%$$
17) Express .825 as a percentage. .825 x 100% = 82.5%	18) Express 60% as a fraction. $$60\% \rightarrow 60 \times \frac{1}{100}$$ $$= \frac{60}{100} = \frac{60 \div 20}{100 \div 20} = \frac{3}{5}$$
19) Express 33% as a decimal. 33% → 33 x .01 = .33	20) What is 30% of 55? $$\frac{\%}{100} = \frac{Part(is)}{Whole(of)}$$ $$\frac{30}{100} = \frac{x}{55}$$ $$(30)(55) = 100x$$ $$1,650 = 100x$$ $$x = 16.5$$

21) Which number is largest?

   A) .25   C) 49%

   B) $\frac{3}{8}$ D) .365

Answer __C__

22) What percent of this figure is shaded?
Hint: State the shaded area as a fraction and then write it as a percent.

   A) 20% B) 40% C) 60% D) 80%

Answer __B__

23) What was the percent change in a grade point average that increased from 2.5 to 3.0?

change = 3.0 - 2.5 = .5

$$\frac{\%}{100} = \frac{change}{Original\ Number}$$

$$\frac{x}{100} = \frac{.5\ points}{2.5\ points}$$

$$2.5x = 100(.5)$$

$$2.5x = 50$$

$$x = 20\%$$

24) A $3.15 sales tax was paid on a $45 radio. Express the sales tax as a percent.

$$\frac{\%}{100} = \frac{Part\,(is)}{Whole\,(of)}$$

$$\frac{x}{100} = \frac{\$3.15}{\$45.00}$$

$$45x = 100(3.15)$$

$$45x = 315$$

$$x = 7\%$$

Note how each fraction of the proportions on this page have the same label.

25) A map scale shows that 1 inch equals 75 miles. How far apart are two cities separated by 6 inches on this map?

Note: $\frac{inch}{inches} = 1$

and the answer is in miles

$$\frac{1\ inch}{6\ inches} = \frac{75\ miles}{x\ miles}$$

$$1x = 6(75)$$

$$= 450\ miles$$

26) Sixteen ounces of hamburger are needed to make four hamburgers. How many ounces of hamburger are required to serve 15 people 1 hamburger each?

$$\frac{16\ ounces}{x} = \frac{4\ hamburgers}{15\ hamburgers}$$

Note: $\frac{hamburgers}{hamburgers} = 1$

$$16(15) = 4x$$

$$240 = 4x$$

$$x = 60\ ounces$$

27) 15% of 80 Statistics students earned an A as a final grade. How many students earned an A?

$$\frac{\%}{100} = \frac{Part(is)}{Whole(of)}$$

$$\frac{15\%}{100\%} = \frac{x}{80 \text{ students}} \leftarrow$$

$$(15)(80) = 100x$$

$$1,200 = 100x$$

$$x = 12 \text{ students} \leftarrow$$

Note how the unknown's fraction label is students and the answer's label is students.

28) Margarita pays social security taxes of 8.2% on her salary. What was her pay if $41 was taken out for the tax?

$$\frac{\%}{100} = \frac{Part(is)}{Whole(of)}$$

$$\frac{8.2\%}{100\%} = \frac{\$41}{x}$$

$$8.2x = 100(41.00)$$

$$8.2x = 4,100$$

$$x = \$500$$

29) John usually studies 80 minutes on weekends. He would like to increase his study time by 25%. Find the required increase in study time.

$$\frac{\%}{100} = \frac{Part(is)}{Whole(of)}$$

$$\frac{25\%}{100\%} = \frac{x}{80 \text{ minutes}}$$

$$(25)(80) = 100x$$

$$2,000 = 100x$$

$$x = 20 \text{ minutes}$$

30) An $85 sports coat was marked down by 20%. What was the markdown?

$$\frac{\%}{100} = \frac{Part(is)}{Whole(of)}$$

$$\frac{20\%}{100\%} = \frac{x}{\$85.00}$$

$$(20)(85) = 100x$$

$$1,700 = 100x$$

$$x = \$17.00$$

Arrange the numbers in the first column in descending order and then arrange those in the second column in ascending order.

31)	Descending Order High to Low	32)	Ascending Order Low to High
0.0	62%	.35	.333
62%	.6	299%	1/3
.3	47%	.333	.35
47%	.3	1.2	115/100
.002	.3%	1/3	1.2
.6	.002	115/100	299%
.3%	0.0	3.0	3.0