

Name: _____

Class: _____

Date: _____

SHOW WORK to receive full credit.

1. What is the difference between a ratio and a rate?

2. Write the comparison as a **ratio** in simplest form using a fraction, a colon, and the word "to":

(a) 50 hours to 12 hours

2(a) _____

(b) 12 feet to 18 feet

2(b) _____

3. Write following statements as a **unit rate**

(a) "Jay traveled 350 miles on 12.5 gallons of gas"

3(a) _____

(b) "Thad can type 240 words in 3 minutes"

3(b) _____

4. Is the following proportion **True** or **Not True** (Show work to receive credit):

(a) $\frac{2}{5} = \frac{8}{15}$

4(a) _____

(b) $\frac{3}{8} = \frac{24}{60}$

4(b) _____

(c) $\frac{4}{7} = \frac{16}{28}$

4(c) _____

(d) $\frac{5}{8} = \frac{25}{40}$

4(d) _____

5. Complete the following proportions:

(a) $\frac{3}{7} = \frac{9}{n}$

5(a) _____

(b) $\frac{4}{n} = \frac{32}{40}$

5(b) _____

(c) $\frac{n}{5} = \frac{15}{20}$

5(c) _____

(d) $\frac{0.7}{9.8} = \frac{n}{50.4}$

5(d) _____

6. The exchange rate between US dollars and Japanese Yen is 2 to 5.

Calculate the cost in Japanese Yen of an American car costing \$25,000 dollars.

6. _____

7. A paint manufacturer suggest using 1.5 gallons of paint for every 400 square feet of a wall. At this rate, how many gallons of paint would be required for a room that has 36,000 square feet of wall?

7. _____

8. Write 40%

(a) as a fraction:

8(a) _____

(b) as a decimal:

8(b) _____

9. Write 325%

(a) as a fraction:

9(a) _____

(b) as a decimal:

9(b) _____

10. Write the following decimals as a percent.

(a) 0.17

10(a) _____

(b) 0.006

10(b) _____

11. Write the following fractions as a percent (round to the nearest tenth of a percent).

(a) $\frac{2}{5}$

11(a) _____

(b) $2\frac{1}{6}$

11(b) _____

12. Answer the following questions. Round any answers to the nearest tenth of a percent.

(a) What is 0.25% of 3000? 12(a) _____

(b) What percent of 75 is 24? 12(b) _____

(c) 12% of what is 9? 12(c) _____

(d) 24 is 320% of what? 12(d) _____

(e) What is 250% of 18? 12(e) _____

(f) 33 is 220% of what? 12(f) _____

(g) 325% of 4.4 is what? 12(g) _____

13. 20,000 trucks were inspected last year at the Colorado DMV, if 4.8% of all trucks inspected failed to meet pollution standards, how many trucks failed?

13. _____

14. In a test of breaking strength of concrete slabs for freeway construction, 3 of the 200 slabs tested did not meet safety requirements. What percent of the slabs failed?

14. _____

15. At Bob's Pizza Emporium, 15% of all pizza sales during January occur during the Superbowl weekend. If Bob sold 750 pizza's last year during the Superbowl, how many total pizza's did he sell in January?

15. _____

16. The number of horses sold at the horse fair in 2005 was 24, and in 2006 was 35. What was the percent increase in the number of horses sold?

16. _____

17. The price of gasoline is expected to increase 25% next year. If the current price of gasoline is \$2.75 per gallon what is the price expected to be next year?

17. _____

18. Bob's fruit stand uses a mark up of \$2.50 on a box of produce.
If it costs Bob \$1.65 per box, what is the markup rate?

18. _____

19. Brad's Magic shop uses a markup rate of 48%. What is the selling price of a magic sword that costs \$50?

19. _____

20. A new computer allows the compile time for a computer program to decrease from 52 minutes to 39 minutes. What is the percent decrease in compile time?

20. _____

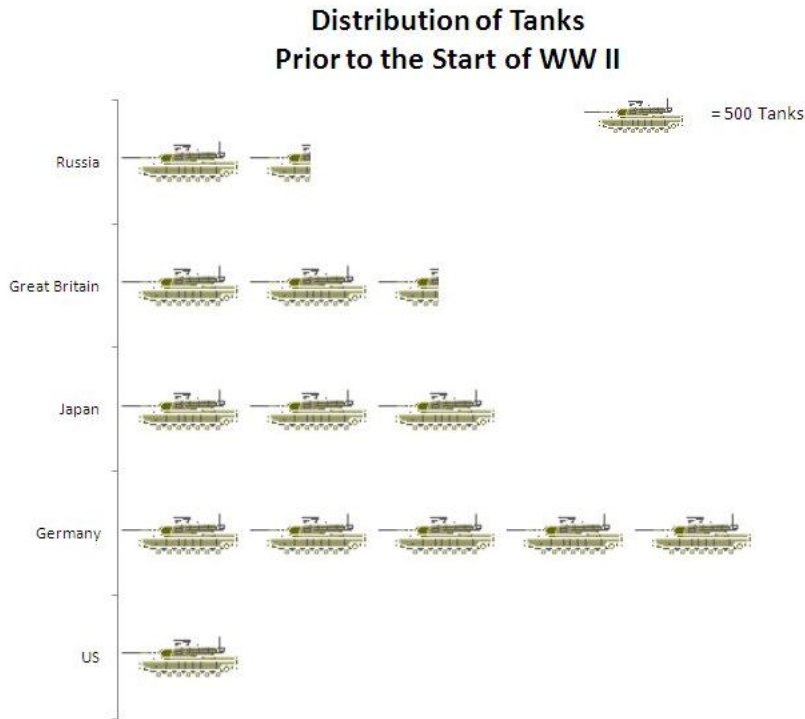
21. Bob's Magic shop is having a sale on magic shields. Normally a shield sells for \$45.00 but is being sold for 15% off. What is the price of a magic shield?

21. _____

22. The price of rubber duckies has gone from \$4.50 to \$3.65 in one year. What is the percent decrease in the price of rubber duckies?

22. _____

23. Answer the following questions about TANKS!:



(a) How many tanks did Germany begin the war with? 23(a) _____

(b) How many tanks did Great Britain begin the war with? 23(b) _____

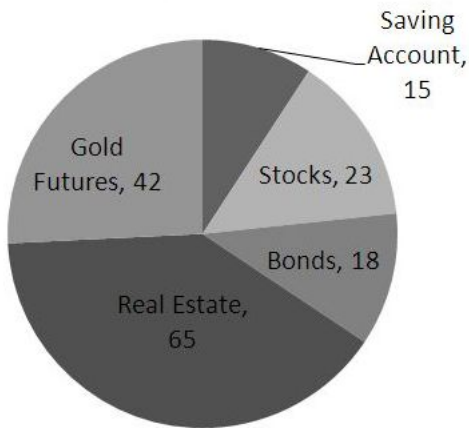
(c) How many more tanks did Japan have than the US at the beginning of the war? 23(c) _____

(d) What percentage of the total number of tanks did Russia have? 23(d) _____

(e) What is the ratio of German tanks to Japanese tanks? 23(e) _____

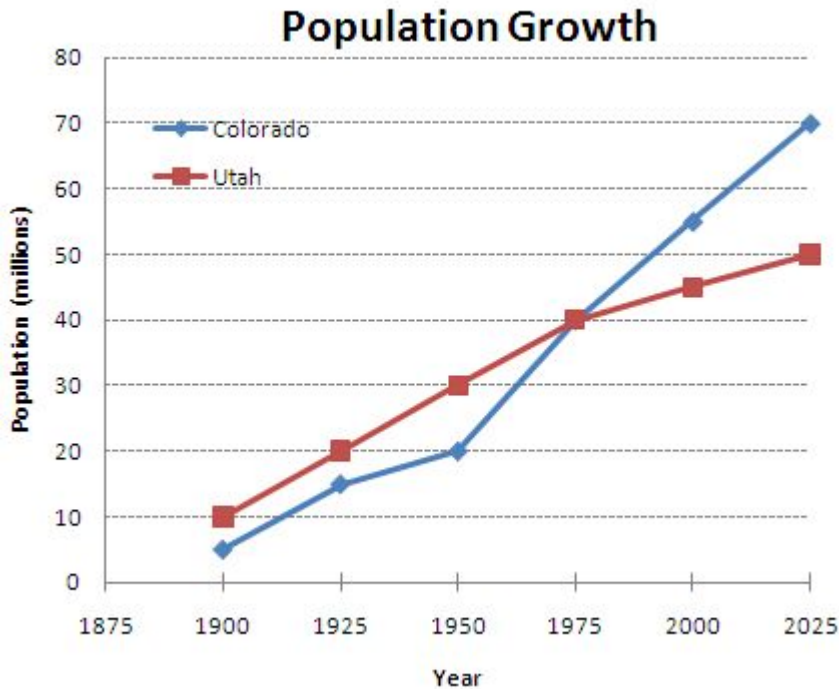
24. The pie graph below shows the distribution of the money in Jay's retirement account. The number in each pie represents amount of money invested times \$1,000.

Distribution of Money in Jay's Retirement Account (In His Dreams)



- (a) What is the total amount of money Jay has in his retirement account ? 24(a) _____
- (b) How much money is invested in gold futures? 24(b) _____
- (c) What percentage of Jay's investment is in gold futures? (Round to the nearest tenth of a percent.) 24(c) _____
- (d) What is the ratio of money invested in Savings to money invested in Real Estate? 24(d) _____

25. The double line graph shown below shows the population growth of Colorado and Utah over the last 125 years, and the projected growth for the next 15 years. Answer the following questions about the graph:



- (a) In 1925 which state had the largest population? 25(a) _____
- (b) In 1950 how much greater was the population of Utah than that of Colorado? 25(b) _____
- (c) In which 25 year time period did that population of Colorado increase the least? 25(c) _____
- (d) What is the percent increase in population from 1900 to 1975 in Utah? 25(d) _____
- (e) What is the total population of Colorado and Utah in 2000? 25(e) _____