#_____ Name: _____ Date: _____ Class: _____

Post Test Percent and Proportional Relationships Study Guide (Answer Key on Zhang7math.weebly.com)

1. At a pet store, 18% of the animals are dogs. If there are a total of 58 animals at the pet store, write a proportion that can be used to find x, the number of dogs at the pet store?

$\frac{18}{100} = \frac{x}{58}$

2. At a pet store, 45% of the animals are dogs. If there are a total of 108 animals at the pet store, write a proportion can be used to find x, the number of dogs at the pet store?

$\frac{45}{100} = \frac{x}{108}$

3. In Ada's NAIL POLISH collection, she has 8 pink shades of NAIL POLISH, 12 blue shades of NAIL POLISHs, 7 green shades of NAIL POLISH, and 3 gray shades of NAIL POLISH. What percent of Ada's NAIL POLISH collection is the shade of blue?

$\frac{12}{8+12+7+3} = \frac{12}{30} = 0.4 = \boxed{40\%}$

4. In Cindy's UNICORN collection, she has 9 tall UNICORNs, 10 small UNICORNs, 27 white UNICORNs, and 13 rainbow UNICORNs. What percent of Cindy's UNICORN collection is rainbow?

$\frac{13}{9+10+27+13} = \frac{13}{59} \approx 0.22 \approx \boxed{22\%}$

5. What is 165% of 125?

$\frac{x}{125} = \frac{165}{100}$

$125 \cdot 165 = 100x$

$20625 = 100x$

$\boxed{x = 206.25}$

6. What percent of 70 is 135?

$\frac{135}{70} = \frac{x}{100}$

$70x = 135 \cdot 100$

$70x = 13500$

$\boxed{x \approx 192.86}$

7. Twenty percent of the 25 players on the soccer team are new this year. How many players on the team are new this year?

$\frac{20}{100} = \frac{x}{25}$

$20 \cdot 25 = 100x$

$500 = 100x$

$5 = x$

$\boxed{\text{5 players are new}}$

8. Twenty-five percent of the 32 players on the soccer team are girls this year. How many players on the team are boys this year?

$\frac{25}{100} = \frac{x}{32}$

$100x = 32 \cdot 25$

$100x = 800$

$x = 8$ girls

$32 - 8 = \boxed{24 \text{ boys}}$

9. What number is 18% of 44?

$\frac{18}{100} = \frac{x}{44}$

$100x = 18 \cdot 44$

$100x = 792$

$\boxed{x = 7.92}$

10. 33% of what number is 17?

$\frac{33}{100} = \frac{17}{x}$

$17 \cdot 100 = 33x$

$1700 = 33x$

$\boxed{x \approx 51.52}$

11. While shopping, Hans spent $87. If the amount he spent was 25% of his savings, how much savings did he have before he shopped?

$\frac{87}{x} = \frac{25}{100}$

$100 \cdot 87 = 25x$

$8700 = 25x$

$\boxed{x = 348}$

12. While shopping, Kito spent $80. If the amount he spent was 20% of his savings, how much savings did he have before he shopped?

$\frac{80}{x} = \frac{20}{100}$

$20x = 80 \cdot 100$

$20x = 8000$

$\boxed{x = 400}$

13. Sahithi has lunch at a restaurant. If her bill was $15.15 and Sahithi wants to leave a 18% tip, what is a reasonable estimate for the amount she should leave for the tip?

$18\% = 0.18$

$15.15(0.18)$

$2.729 \approx \boxed{\$2.73}$

14. Maria has lunch at a restaurant. If her bill was $16.95 and Maria wants to leave a 20% tip, what is a reasonable estimate for the amount she should leave for the tip?

$20\% = 0.2$

$16.95(0.2)$

$\boxed{\$3.39}$

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15. A desk is on sale for $476. If this price represents a 20% discount from the original price, what is the original price?

$100 - 20 = 80\%$

$\frac{80}{100} = \frac{476}{x}$

$100 \cdot 476 = 80x$

$47600 = 80x$

$\boxed{\$595 = x}$

16. A computer is on sale for $1376. If this price represents a 20% discount from the original price, what is the original price?

$100 - 20 = 80\%$

$\frac{80}{100} = \frac{1376}{x}$

$80x = 137600$

$x = 1720$

$\boxed{\text{original price is } \$1720}$

17. What is the percent change from 250 to 310? Round to the nearest whole percent if necessary.

$\frac{|250-310|}{250} = \frac{60}{250} = 0.24 = 24\%$

$\boxed{24\% \text{ increase}}$

18. What is the percent change from 310 to 250? Round to the nearest whole percent if necessary.

$\frac{|310-250|}{310} = \frac{60}{310} \approx .1935 \approx 19\%$

$\boxed{19\% \text{ decrease}}$

19. What is the total cost of a couch for $1234 after a 15% markup? Round to the nearest cent?

$100 + 15 = 115\% = 1.15$

$1234(1.15) = 1419.10$

$\boxed{\$1419.10}$

20. What is the total cost of a couch for $1234 after a tax rate of $6\frac{1}{4}$%? Round to the nearest cent?

$100 + 6.25 = 106.25 = 1.0625$

$1234(1.0625) = 1311.125$

$\boxed{\$1311.13}$

21. What is the simple interest paid to the nearest cent for each principal, interest rate, and time?

$514, 3%, 15 months

$P = \$514$

$r = 3\% = 0.03$

$t = 15 \text{ months} = \frac{15}{12} = 1.25 \text{ yrs.}$

$I = (514)(0.03)(1.25)$

$I = 19.275$

$\boxed{I = 19.28}$

22. What is the simple interest paid to the nearest cent for each principal, interest rate, and time?

$1,550, $2\frac{3}{4}$%, 9 months

$P = 1,550$

$r = 2\frac{3}{4}\% = 2.75\% = 0.0275$

$t = 9 \text{ months} = \frac{9}{12} = 0.75$

$I = 1,550(0.0275)(0.75)$

$I = 31.96875$

$\boxed{I = \$31.97}$

23. While eating lunch, Joshua ate 15% of the carrots he had in his bag. There were 25 carrots in his bag. How many carrots did Joshua eat?

$25(0.15) = 3.75$

$\boxed{3.75 \text{ carrots}}$

24. While eating lunch, Willis ate 65% of the candies he had in his bag. There were 15 candies in his bag. How many candies did Willis eat?

$15(0.65) = 9.75$

$\boxed{9.75 \text{ candies}}$

25. Yuxue ate lunch and wanted to leave her waitress a 22% tip. Her meal cost $7.95. How much money should Yuxue leave for the tip?

$7.95(0.22)$

$1.749 \approx \boxed{\$1.75 \text{ tip}}$

26. Alimoon ate lunch and wanted to leave his waitress a 15% tip. Her meal cost $10.25. How much money should Alimoon leave for the tip?

$10.25(0.15)$

$1.5375 = \boxed{\$1.54 \text{ tip}}$

27. Timothy bought a pair of shoes for $102. The next week he noticed that the price for the same pair of shoes was now $98. Find the percent of change.

$\frac{|102-98|}{102} = \frac{4}{102} = 0.0392$

$\approx \boxed{3.9\% \text{ decrease}}$

28. Benny bought a pair of shoes for $52. The next week he noticed that the price for the same pair of shoes was now $45. Find the percent of change.

$\frac{52-45}{52} = \frac{7}{52} \approx 0.1346$

$\approx \boxed{13.5\% \text{ decrease}}$

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