Name_____ Date_____

OREGON-COLUMBIA LOCAL 48 NECA IBEW ELECTRICAL TRAINING CENTER

Percents Homework

References:

Answers:
services.nietc.org

Khan Academy:
https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-percent-decimal-conversions/v/converting-decimals-to-percents-ex-1

Mathplanet:
https://www.mathplanet.com/education/pre-algebra/ratios-and-percent/solving-problems-with-percent

Math is Fun:
https://www.mathsisfun.com/converting-fractions-percents.html

Questions:

CONVERT THE FOLLOWING DECIMAL NUMBERS TO A PERCENTAGE:

1) 0.07 = ? **Decimal × 100 = Percent**
Answer: **7 %**

2) 0.65 = ?
Answer: **65 %**

3) 0.004 = ?
Answer: **0.4 %**

4) 1.05 = ?
Answer: **105 %**

5) 0.5 = ?
Answer: **50 %**

6) 2.00 = ?
Answer: **200 %**

7) 7.49 = ?
Answer: **749 %**

8) 0.0015 = ?
Answer: **0.15 %**

9) 22.5 = ?
Answer: **2250 %**

CONVERT THE FOLLOWING PERCENTAGES TO A DECIMAL NUMBER:

10) 45% = ? **Percent ÷ 100 = Decimal**
Answer: **0.45**

11) 99% = ?
Answer: **0.99**

12) 11.5% = ?
Answer: **0.115**

13) 110% = ?
Answer: **1.1**

14) 0.2% = ?
Answer: **0.002**

15) 88% = ?
Answer: **0.88**

16) 500% = ?
Answer: **5**

17) 6.75% = ?
Answer: **0.0675**

CONVERT THE FRACTION INTO A PERCENTAGE FOR THE FOLLOWING QUESTIONS:

18) $^1/_2$

Answer: **50 %**

(Numerator ÷ Denominator) × 100 = Percent
(1 ÷ 2) × 100 = Percent

19) $^3/_8$

Answer: **37.5 %**

20) $^5/_{16}$

Answer: **31.25 %**

21) $^{11}/_{32}$

Answer: **34.375 %**

22) $^1/_4$

Answer: **25 %**

23) $^{11}/_{10}$

Answer: **110 %**

FIND WHAT PERCENTAGE THE FIRST NUMBER IS OF THE SECOND NUMBER FOR THE FOLLOWING QUESTIONS:

24) 20 = ? of 50

Answer: **40 %**

(First # ÷ Second #) × 100 = Percent

25) 9 = ? of 27

Answer: **33.3 %**

26) 11 = ? of 100

Answer: **11 %**

27) 0.6 = ? of 2.3

Answer: **26.1 %**

28) 1,417 = ? of 855

Answer: **165.7 %**

29) 45% of 111 = ?

Answer: **49.95**

30) 5% of $112.50 = ?

Answer: **$5.63**

31) 14.9% of 255 = ?

Answer: **37.995**

32) 0.003% of 2,529 = ?

Answer: **0.07587**

33) 125% of 14.5 = ?

Answer: **18.125**

34) 22.5 is 15% of ?

Answer: **150**

35) $2.20 is 5% of ?

Answer: **$44**

36) 1,455 is 150% of ?

Answer: **970**

37) 75 is 75% of ?

Answer: **100**

38) 22 is 0.5% of ?

Answer: **4400**

39) $11.85 is 0.03% of ?

Answer: **$39500**

40) If a test has 60 questions on it and the student answered 45 of them correctly, what would his or her grade be expressed as a percentage?

Answer: **75 %**

(portion ÷ total) × 100 = Percent
(45 ÷ 60) × 100 = 75 %

41) A contractor figured materials for a job would cost $2,415. He also estimated labor for the same job would cost $1,832. If he adds 18% to cover overhead and profit, how much will he charge the customer for this job?

Answer: **$5011.4 6**

Find 18% of total estimate ($2415 + $1832) × 0.18 = $764.46
Add 18% to total estimate $2415 + $1832 +

42) Frank purchased tools that totaled $24.80. If he had to pay a 6% sales tax, how much did Frank have to pay in total?

Answer: **$26.29**

Find 6% of total $24.80 × 0.06 = $1.49
Add 6% to total $24.80 + $1.49 = $26.29
or: multiply by 106% $24.80 × 1.06 = $26.29

43) If an apprentice makes 55% of Journeyman wages, what would an apprentice make per hour if the Journey scale is $17.64?

Answer: **$9.70**

Convert Percent to Decimal Percent 55 ÷ 100 = 0.55
Multiply total by Decimal Percent $17.64 × 0.55 = $9.70

44) The National Electrical Code allows a maximum voltage drop of 3% on branch circuits. What is the maximum allowable voltage drop on a 240-volt branch circuit?

Answer: **7.2 V**

Convert Percent to Decimal Percent 3 ÷ 100 = 0.03
Multiply total by Decimal Percent 240V × 0.03 = 7.2V

45) A job calls for installing 270 lighting fixtures. If 81 fixtures have been installed so far, what percent of the job still has to be done?

Answer: **70 %**

(portion ÷ total) × 100 = Percent
(81 ÷ 270) × 100 = 70 %

46) Can a 1½" conduit, with a total area of 2.04 square inches, be filled with wires that total 0.93 square inches if the maximum fill for that conduit is 40%?

Answer:

a. Yes
b. No

(portion ÷ total) × 100 = Percent
(0.93 ÷ 2.04) × 100 = 45.59 %

47) If a 20-horsepower motor only delivers 17.8 horsepower to its load, what is the efficiency of the motor?

Answer: **89 %**

Note: efficiency is a ratio of Output (17.8) to Input (20hp)
(Output ÷ Input) × 100 = Percent
(17.8hp ÷ 20hp) × 100 = 89 %

48) Nancy and John each had worked 22¾ hours on a job when their foreman told them that they were 65% complete. How many hours are left on this job?

Answer: **24.5 hours**

portion ÷ Decimal Percent = total35hrHours left for Nancy: 12.25hr
22.75hr ÷ 0.65 = 35hr – 22.75hr Hours left for John:+12.25hr

49) A job cost the customer $28,244.66. If 41% of this job was labor, what was the actual labor cost to the customer?

Answer: **$11580. 31**

Convert Percent to Decimal Percent 41 ÷ 100 = 0.41
Multiply total by Decimal Percent $28244.66 × 0.41 = $11580.31