

Percents Review

Write each as a decimal. Round to the **hundredths place.**

1) 858% 8.58

2) 53% 0.53

3) 5% 0.05

4) 1% 0.01

5) $\frac{1}{100}$ 0.01

6) $\frac{1}{360}$ 0.003

7) $\frac{18}{25}$ 0.72

8) $\frac{47}{80}$ 0.59

Write each as a percent. Round to the nearest **tenth of a percent.**

9) $\frac{3}{5}$ $\frac{60}{100}$ 60%

10) $\frac{29}{75}$.3866 38.7%

11) $\frac{93}{95}$ $\rightarrow 0.9789$ 97.9%

12) $\frac{23}{25}$.92 92%

Write each as a decimal. Round to the **thousandths place.**

13) $\frac{7}{55}$ 0.127

14) $\frac{8}{15}$ 0.533

15) $\frac{1}{170}$ 0.006

16) $\frac{1}{110}$ 0.009

Solve each problem.

17) 108 minutes is what percent of 120 minutes?
90%

18) 40.8 miles is what percent of 103.7 miles?
39.3%

20) 158 minutes is what percent of 122 minutes?
129.5%

21) What is 45% of 33 hours?
14.85 hrs

23) 2% of \$14 is what?
\$0.28

25) 85 grams is 38% of what?
223.68 g

27) 43% of what is 53 grams?
123.26 g

19) What percent of 137 grams is 78.5 grams?
57.3%

22) What is 17% of 120.7 inches?
20.52 in

24) 7% of 58 grams is what?
4.06 g

26) 32 hours is 10% of what?
320 hrs

28) 91% of what is 93 tons?
102.20 tons

Work on next page
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Find the selling price of each item.

- 29) Cost of socks: \$20.50
Markup: 42% **\$29.11**
- 30) Cost of a tie: \$14.50
Markup: 20% **\$17.40**
- 31) Cost of a sled: \$160.00
Markup: 80% **\$288**
- 32) Cost of a bicycle: \$1,200.00
Markup: 5% **\$1,260**
- 33) Original price of a puppy: \$369.50
Discount: 35% **\$240.17**
- 34) Original price of a lizard: \$7.99
Discount: 55% **\$3.60**
- 35) Original price of a book: \$50.50
Discount: 50% **\$25.25**
- 36) Original price of socks: \$18.95
Discount: 10% **\$17.05**
- 37) Cost of a radio: \$19.50
Markup: 60%
Tax: 2% **\$31.82**
- 38) Cost of a parrot: \$199.95
Markup: 40%
Tax: 2% **\$285.53**
- 39) Original price of a telescope: \$100.00
Discount: 10%
Tax: 2% **\$91.80**
- 40) Original price of an oil change: \$23.50
Discount: 35%
Tax: 3% **\$15.73**

Read the following word problems and set up your equation properly. Then answer in a complete sentence.

- 41) The Royal Opera House Orchestra in London includes 13 musicians who play the viola. The musicians in the viola section make up 12.5% of the orchestra. How many musicians are in the Royal Opera House Orchestra? **104 musicians**
- 42) You are reading a book that has 560 pages. You have read $\frac{11}{20}$ of the book. What percent of the book have you read? **55%**
- 43) A car salesperson earns 1.5% commission on every car sold. The salesperson sells a car for \$22,500. What is the commission earned on the car? **\$337.50**
- 44) If you put \$759 into a savings account that earns 6%, how much interest will you receive at the end of the four years? What is the balance at the end of the four years?
Interest: \$182.16 total: \$941.16
- 45) What was the interest rate if your balance on an investment of \$669 at the end of two years is \$709.14 **3%**
- 46) Your final balance on an investment of \$463 invested at 9% was \$796.36. For what period of time did you invest? **8 years**
- 47) If an investment over seven years ~~of~~ ^{which earned} ~~at a rate~~ ^{in interest} of \$356.58 results in a final balance of \$922.58, what was the original investment? **\$566**
- 48) How much interest is earned on an account for \$990 invested at 5% for two years? **\$99**
- 49) The Apple Store had a 25% off sale on an iMac for \$2512.50. What is the original price of the iMac? **\$3350**
- 50) A Koi fish was marked up 40% from its original price. The retail price of the Koi was \$434.00. What is the original price? **\$310**

$$17.) \frac{108}{120} = X \cdot \frac{120}{120}$$

$$9 = X$$

$$\boxed{X = 90\%}$$

$$18.) \frac{40.8}{103.7} = X \cdot \frac{103.7}{103.7}$$

$$393 = X$$

$$\boxed{X = 39.3\%}$$

$$19.) X \cdot \frac{137}{137} = \frac{78.5}{137}$$

$$X = 57.29$$

$$\boxed{X = 57.3\%}$$

$$20.) \frac{158}{122} = X \cdot \frac{122}{122}$$

$$1.295 = X$$

$$\boxed{X = 129.5\%}$$

$$21.) X = .45 (33)$$

$$\boxed{X = 14.85 \text{ hrs}}$$

$$22.) X = .17 (120.7)$$

$$\boxed{X = 20.52 \text{ in}}$$

$$23.) .02 (14) = X$$

$$\boxed{X = \$0.28}$$

$$24.) .07 (58) = X$$

$$\boxed{X = 4.06 \text{ grams}}$$

$$25.) \frac{85}{.38} = \frac{.38}{.38} X$$

$$223.684 = X$$

$$\boxed{X = 223.68 \text{ g}}$$

$$26.) \frac{32}{.10} = \frac{.10}{.10} X$$

$$\boxed{X = 320 \text{ hrs}}$$

$$27.) \frac{.43}{.43} X = \frac{53}{.43}$$

$$\boxed{X = 123.26 \text{ g}}$$

$$28.) \frac{.91}{.91} X = \frac{93}{.91}$$

$$\boxed{X = 102.20 \text{ tons}}$$

$$29.) \text{ markup: } 42\% \text{ of } 20.50$$

$$.42 (20.50)$$

$$\$8.61$$

$$20.50 + 8.61 = \boxed{\$29.11}$$

$$30.) \text{ markup: } 20\% \text{ of } 14.50$$

$$.20 (14.50)$$

$$\$2.90$$

$$14.50 + 2.90 = \boxed{\$17.40}$$

31.) markup: 80% of 160
 $.8(160)$
 $\$128$
 $160 + 128 = \boxed{\$288}$

32.) markup: 5% of 1200
 $.05(1200)$
 $\$60$
 $1200 + 60 = \boxed{\$1,260}$

33.) Discount: 35% of 369.50
 $.35(369.50)$
 $\$129.33$
 $369.50 - 129.33 = \boxed{\$240.17}$

34.) discount: 55% of 7.99
 $.55(7.99)$
 $\$4.39$
 $7.99 - 4.39 = \boxed{\$3.60}$

35.) discount: 50% of 50.50
 $\boxed{\$25.25}$
 50% off means discount & sale price are the same

36.) discount: 10% of 18.95
 $.10(18.95)$
 $\$1.90$
 $18.95 - 1.90 = \boxed{\$17.05}$

37.) markup: 60% of 19.50
 $.60(19.50)$
 $\$11.70$
 $19.50 + 11.70 = \boxed{\$31.20}$

tax: 2% of 31.20
 $.02(31.20)$
 $.62$
 $31.20 + 0.62 = \boxed{\$31.82}$

38.) markup: 40% of 199.95
 $\$79.98$
 $+199.95$
 tax: 2% of 279.93
 $\$5.60 + 279.93$
 $\boxed{\$285.53}$

39.) discount: 10% of 100
 $\$90$
 tax: 2% of 90
 $1.8 + 90$
 $\boxed{\$91.80}$

40.) discount: 35% of 23.50
 $\$8.23$
 $23.50 - 8.23 = 15.27$
 tax: 3% of 15.27
 $0.46 + 15.27$
 $\boxed{\$15.73}$

41.) 13 is 12.5% of what

$$13 = .125x$$

$$\frac{13}{.125} = \frac{.125x}{.125}$$

$$104 = x$$

There are 104 musicians in the orchestra.

42.) What is $\frac{11}{20}$ of 560

$$x = \frac{11}{20}(560)$$

$$x = 308 \text{ pages}$$

$$\frac{308}{560} = .55 \quad (\text{*same as just using } \frac{11}{20})$$

You have read 55% of the book.

43.) What is 1.5% of 22,500

$$x = .015(22,500)$$

$$x = 337.5$$

The salesman earns \$337.50

44.) $I = Prt$

$$I = (759)(.06)(4)$$

$$I = 182.16 \text{ interest} + 759$$

You will earn \$182.16 in interest, giving you a total of \$941.16.

45.) $I = Prt$

$$40.14 = (669)(r)(2)$$

$$40.14 = 1338r$$

$$\frac{40.14}{1338} = \frac{1338r}{1338}$$

$$r = .03 \rightarrow 3\%$$

$$\frac{709.14}{-669.00}$$

40.14 in interest

The interest rate was 3%

46.) $I = Prt$

Interest = 333.36

$$333.36 = (463)(.09)(t)$$

$$333.36 = 41.67t$$

$$\frac{333.36}{41.67} = \frac{41.67t}{41.67}$$

$$8 = t$$

You invested for 8 years.

47.) total - interest = original
922.58 - 356.58

\$566 was originally invested

48.) $I = Prt$

$$I = (990)(.05)(2)$$

$$I = 99$$

\$99 in interest was earned

49.) original - discount = sale

$$x - .25x = 2512.50$$

$$.75x = 25,12.50$$

$$\frac{.75x}{.75} = \frac{25,12.50}{.75}$$

It was originally \$3350

50.) original + markup = retail

$$x + .4x = 434$$

$$\frac{1.4x}{1.4} = \frac{434}{1.4}$$

It was originally \$310

14.00

$$I = 7.5$$

15.2% of 100

$$(1)(1.075)(1) = 1.075$$

$$1.075 = x$$

$$1.075 = 1.075$$

$$1.075 = x$$

$$1.075 = 1.075$$

$$x = 1.075$$

$$1.075 = 1.075$$

There are 104 minutes in the market.

The interest rate was 8%

14.00

$$I = 7.5$$

15.2% of 100

$$(1)(1.075)(1) = 1.075$$

$$1.075 = x$$

$$1.075 = 1.075$$

$$x = 1.075$$

$$1.075 = 1.075$$

(1.075) = 1.075

$$1.075 = 1.075$$

Your investment for 8 hours

total interest = 14.00 - 14.00 = 0

You have only 8% of the bank

total interest = 14.00

15.2% of 100

$$1.075 = x$$

$$x = 1.075$$

$$I = 7.5$$

The interest rate was 8%

$$(1)(1.075)(1) = 1.075$$

$$1.075 = 1.075$$

$$I = 7.5$$

$$(1)(1.075)(1) = 1.075$$

$$1.075 = 1.075$$

total interest = 14.00

$$1.075 = 1.075$$

$$1.075 = 1.075$$

You will have 15.2% of the bank

total interest = 14.00

total interest = 14.00

$$1.075 = 1.075$$

$$1.075 = 1.075$$

total interest = 14.00

$$1.075 = 1.075$$