Conversions Among Percents, Decimals, and Fractions

EXAMPLE 1

Write $12\frac{1}{2}\%$ as a decimal.

$12\frac{1}{2}\% = 12.5\%$

$\phantom{12\frac{1}{2}\%} \doteq \frac{12.5}{100}$

$\phantom{12\frac{1}{2}\%} = 0.125$

$12\frac{1}{2}\% = 0.125$

EXAMPLE 2

Change $37\frac{1}{2}\%$ to a fraction.

$37\frac{1}{2}\% = 37.5\%$

$\phantom{37\frac{1}{2}\%} = \frac{375}{1000}$

$\phantom{37\frac{1}{2}\%} = \frac{375 \div 125}{1000 \div 125}$

$\phantom{37\frac{1}{2}\%} = \frac{3}{8}$

$37.5\% = \frac{3}{8}$

EXAMPLE 3

Change $\frac{5}{8}$ to a percent.

$\frac{5}{8} = 5 \div 8$

$$\begin{array}{r} 0.625 \\ 8\overline{)5.000} \\ \underline{4\,8} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

$\frac{5}{8} = 0.625$

$\phantom{\frac{5}{8}} = 62.5\%$

$\frac{5}{8} = 62.5\%$

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1. Change each percent to a decimal.

a. 25% b. 17% c. 98%

d. 4% e. 87.5% f. 17.5%

g. 6.7% h. 75.8% i. 47%

2. Change each percent to a fraction.

a. 4% b. 3.1% c. $27\frac{1}{2}\%$

d. $17\frac{1}{4}\%$ e. $31\frac{1}{2}\%$ f. $52\frac{3}{4}\%$

g. $553\frac{1}{2}\%$ h. $6\frac{1}{4}\%$ i. $5\frac{1}{4}\%$

3. Change each fraction to a decimal. Round to 3 decimal places if necessary.

a. $\frac{1}{4}$ b. $\frac{3}{8}$ c. $\frac{1}{9}$

d. $\frac{2}{3}$ e. $\frac{3}{5}$ f. $\frac{3}{4}$

g. $\frac{6}{7}$ h. $\frac{8}{12}$ i. $\frac{5}{7}$

4. Change each percent to a decimal.

a. $16\frac{1}{2}\%$ b. $21\frac{3}{4}\%$ c. $16\frac{3}{10}\%$

d. $52\frac{1}{2}\%$ e. $5\frac{2}{3}\%$ f. $12\frac{1}{8}\%$

g. $1\frac{1}{2}\%$ h. $8\frac{1}{12}\%$ i. $6\frac{2}{3}\%$

5. Complete the chart.

Fraction	Decimal	Percent
$\frac{1}{2}$		
	0.125	
		$87\frac{1}{2}\%$
$\frac{5}{6}$		
	0.625	
		68%
$\frac{2}{3}$		

Proportion and Percent

EXAMPLE 1

What is 20% of 60?

$$\frac{n}{60} = \frac{20}{100}$$
$$100 \times n = 60 \times 20$$
$$n = 12$$

EXAMPLE 2

40 is what percent of 160?

$$\frac{40}{160} = \frac{n}{100}$$
$$160 \times n = 40 \times 100$$
$$n = 25$$

EXAMPLE 3

18 is 20% of what number?

$$\frac{18}{n} = \frac{20}{100}$$
$$20 \times n = 18 \times 100$$
$$n = 90$$

1. Calculate.

a. 40% of 80   b. 6% of 40

c. 25% of 80   d. 20% of 120

e. 15% of 60   f. 30% of 300

2. Calculate.

a. 40 is what percent of 80?

b. 3 is what percent of 12?

c. 8 is what percent of 64?

d. 30 is what percent of 42?

e. 10 is what percent of 120?

f. 84 is what percent of 100?

3. Calculate.

a. 350 is 20% of what number?

b. 36 is 10% of what number?

c. 12 is 40% of what number?

d. 20 is 40% of what number?

e. 10 is 8% of what number?

f. 40 is 30% of what number?

g. 15 is 40% of what number?

h. 55 is 20% of what number?

4. Calculate.

a. 52% of 60

b. $5\frac{1}{2}$% of 400

c. $\frac{3}{4}$% of 600

d. 58 is what percent of 65?

e. 75 is what percent of 84?

f. 11 is what percent of 66?

g. 85 is 8.5% of what number?

h. 5.6 is 0.4% of what number?

5. Calculate.

a. 53 is what percent of 212?

b. 62% of 74 is what number?

c. 27 is what percent of 75?

d. 120 is 11.3% of what number?

e. 12 is 0.1% of what number?

6. Which is larger?

a. 16% of 44 or 18% of 42?

b. 27% of 56 or 32% of 49?

c. 82% of 25 or 76% of 34?