Pre-Algebra
Percents
Example 1

Write the following percents as fractions and the following fractions as percents:

1. 20%

2. 37%

3. 72%

4. $\dfrac{9}{20}$

5. $\dfrac{16}{50}$

6. $\dfrac{4}{5}$

1. $20\% = \dfrac{20}{100}$

$= \dfrac{2/2}{10/2} = \dfrac{1}{5}$

$20\% = \dfrac{1}{5}$

2. $37\% = \dfrac{37}{100}$

3. $72\% = \dfrac{72}{100}$

$\dfrac{72/2}{100/2} = \dfrac{36}{50}$

$\dfrac{36/2}{50/2} = \dfrac{18}{25}$

$72\% = \dfrac{18}{25}$

4. $\dfrac{9}{20} = 20\overline{)9.00}^{\,0.45}$

$\dfrac{80\downarrow}{100}$
$\dfrac{100}{0}$

$\dfrac{9}{20} = 0.45 = 45\%$

$\dfrac{9}{20} = 45\%$

5. $\dfrac{16}{50} = \dfrac{16(2)}{50(2)}$

$= \dfrac{32}{100} = 0.32$

$= 32\%$

$\dfrac{16}{50} = 32\%$

6. $\dfrac{4}{5} = 5\overline{)4.00}^{\,0.80}$

$\dfrac{40\downarrow}{00}$

$= 0.80$

$= 80\%$

$\dfrac{4}{5} = 80\%$

Use a proportion to answer the following questions:

1. WHAT PERCENT OF 32 IS 15?

2. WHAT NUMBER IS 40% OF 80?

3. 77 IS 90% OF WHAT NUMBER?

$$\frac{a}{b} = \frac{P}{100}$$ WHERE a = portion of base
                          b = base

$$\frac{P}{100} = Percent$$

1. WHAT ARE WE TRYING TO FIND? P
   WHAT IS a & b?   a = 15   b = 32

$$\frac{a}{b} = \frac{P}{100}$$

$$\frac{15}{32} = \frac{P}{100}$$

CROSS PRODUCT

$$15(100) = 32P$$

$$P = \frac{15(100)}{32} = 46.875$$

ROUND TO NEAREST PERCENT ⟶ 47%

2. $$\frac{a}{b} = \frac{P}{100}$$

$$\frac{a}{80} = \frac{40}{100}$$

$$100a = 80(40)$$

$$a = \frac{80(40)}{100}$$

$$= 32$$

3. $$\frac{a}{b} = \frac{P}{100}$$

$$\frac{77}{b} = \frac{90}{100}$$

$$77(100) = 90b$$

$$b = \frac{77(100)}{90} = 85.56$$

ROUND ⟶ 86

Write the following percents as decimals and the following decimals as percents:

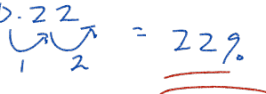1. 36%

2. 71%

3. 43%

4. 0.22

5. 0.196

6. 0.071

1. 36% → 36

36% = 0.36
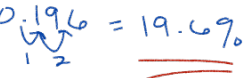
2. 71% → 71

71% = 0.71

3. 43% → 43

43% = 0.43

4. 0.22 = 22%

5. 0.196 = 19.6%

6. 0.071

= 7.1%