12/6

Warm Up

What grade would you rather get on your test?

$\frac{55}{65}$ Or $\frac{35}{42}$

✓ ✓ ✓ ✓ ✓ /

84%

83%

How do we write the following percents as decimals?

per cent (100)

How much per 100

100% → 1.0

82% → $\frac{82}{100}$ → 0.82

19% → $\frac{19}{100}$ → 0.19

5% → 0.05

0.2% → $\frac{0.2}{100}$ → 0.002

Dividing by Powers of 10:

$5\% = \frac{5}{100} = \frac{05.0}{100.0} = \frac{0.05}{1} = 0.05$

$19\% = \frac{19.}{100.} = \frac{0.19}{1}$

$0.07\% = \frac{00.07}{100.} = \frac{0.0007}{1}$

You can move decimal places in BOTH the numerator and denominator at he same time until you get to 1 in your denominator.

Using percents are a way we can compare different ratios because we are really just finding a common ...

Denominator

The ratios are always: $\frac{\text{Part}}{\text{Whole}}$

$\frac{55}{65}$ ← # correct questions

↖ total # of questions

$\frac{55}{65} = 0.84$

You all were then doing either one of the following to find the percent!

$\frac{0.84}{1} = \frac{84}{100}$

$\frac{0.84}{1} = \frac{x}{100}$ (×100)

×100

$x = 84$

Ratios

$$\frac{\text{Part}}{\text{Whole}} = \frac{\#}{100}$$

Let's look back at those test scores:

55/65

35/42

Really hard to compare because of different denominators.

You were figuring this out on your calculators

$\frac{55}{65}$ ← part, ← whole

$\frac{55}{65} = \frac{x}{100}$

Solve for x

$\frac{55}{65} = \frac{x}{100}$ ← this is being ÷ by 100

To undo x being divided by 100, we multiply both sides by 100 and get the x alone.

$\left(\frac{100}{1}\right)\frac{55}{65} = \frac{x}{100}\left(\frac{100}{1}\right)$

$84.61 = x$

Do this all at once in your calculator

100 | x | 55 | ÷ | 65 | =

Let's use ratios to solve percent problems:

$$\frac{x}{100} = \frac{\text{Part}}{\text{Whole}}$$

Find 25% of 240.

$$\frac{25}{100} = \frac{x}{240}$$

$$(240)\frac{25}{100} = \frac{x}{240}(240)$$

$$\frac{(240)(25)}{100} = x$$

$$60 = x$$

32 is 20% of what number?

$$\frac{\text{Part}}{\text{Whole}}$$

$$\frac{20}{100} = \frac{32}{x}$$

$$\frac{\text{Whole}}{\text{Part}}$$

$$(32)\frac{100}{20} = \frac{x}{32}(32)$$

$$160 = x$$

We don't like solving for x in the denominator, so flip everything! Then solve.

What percent is 15 out of 45?

$$\frac{x}{100} = \frac{\text{Part}}{\text{Whole}}$$

$$(100)\frac{x}{100} = \frac{15}{45}(100)$$

$$x = 33.33$$

Percent Calculations Practice

$\frac{\%}{100} = \frac{\text{Part}}{\text{Whole}}$

Solve the following:

1. 72% of 310
2. 21 is 35% of what number?
3. 28 out of 70 is what percent?
4. 6% of what number is 2.36?
5. 3.9 is what percent of 10?
6. 115% of 12
7. 60% of what number is 54?
8. 17% of 800 is what number?
9. What percent of 72 is 27?

Homework

Finish classwork