Study the following.

To calculate a percent of a number, change the percent to a decimal or fraction and then multiply.

Example: 25% of 80

$.25 \times 80 = 20$ or $\frac{1}{4} \times 80 = 80/4 = 20$

Solve by changing the percent to a decimal.

1. 80% of 200

2. 20% of 45

3. 50% of 60

Solve by changing the percent to a fraction.

1. 33 1/3% of 44

2. 75% of 40

3. 25% of 36

Solve either way.

1. Joe sold 30% of his Pokeman collection of 120 cards. How many did he sell?

2. Larry typed 10% of the 140 letters he needed to complete this week. How many did he complete?

3. Sally paid 75% of the cost. The shirt cost $20. How much did she pay?

Study the following.

Another Way to solve percent problems is to write a proportion.

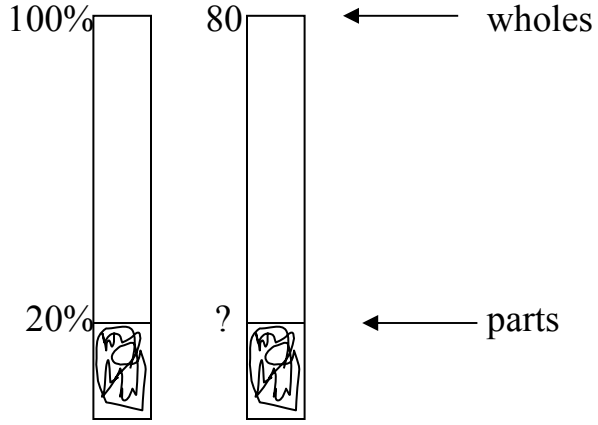
$\frac{\text{Percent(part)}}{\text{100 percent (whole)}} = \frac{\text{part}}{\text{whole}}$ **or** $\frac{\text{100 percent(whole)}}{\text{percent (part)}} = \frac{\text{part}}{\text{whole}}$

Example: 20 % of 80 is what?

$\frac{20}{100} = \frac{?}{80}$ ← (parts) ← (wholes)

$100 \times ? = 20 \times 80$
$100 \times ? = 1600$
$? = 16$

The above example is shown as a picture below.



You could set up the proportion directly from the diagram with the wholes in the numerators, and the parts in the denominators.

$\frac{100}{20} = \frac{80}{?}$ ← (wholes) ← (parts)

$100 \times ? = 20 \times 80$ which is the same as above, so $? = 16$

Draw a diagram. Write a proportion. Solve.

1. Sally gave 10% of her CD collection to her friend. She had 70 CD's in her collection. How many did she give to her friend?

2. Bob used 75% of the box of nails. There were 200 nails in the box. How many nails did he use?

3. Jim played 30% of the songs in his favorite book. The book has 80 songs. How many did he play?