

Sec 5.2 – Calculating Percents

There are 3 ways to interpret percents smaller than 1% and greater than 100%:

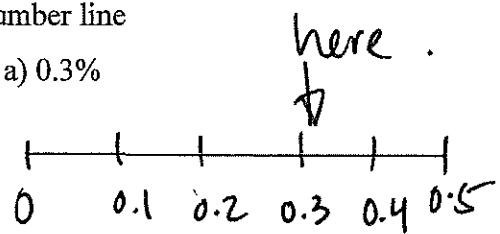
1) pattern-spotting

Percent	Decimal
0.01%	= 0.0001
0.1%	= 0.001
1%	= 0.01
10%	= 0.1
100%	= 1.0
101%	= 1.01
110%	= 1.10

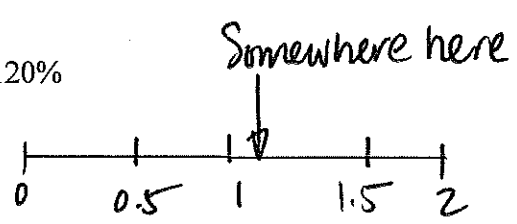
* Note: All percents can be written as fractions out of 100.
e.g. 10% = $\frac{10}{100}$

2) number line

a) 0.3%

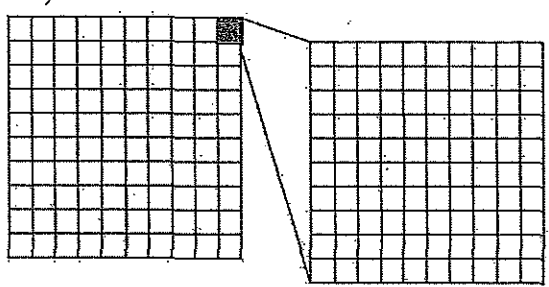


b) 120%

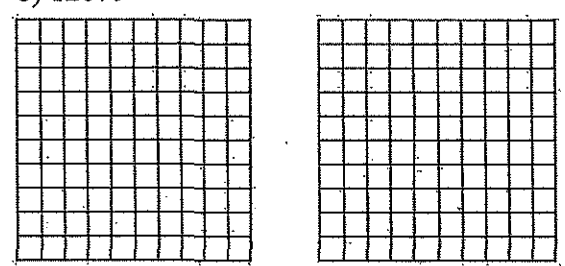


3) hundreds chart

a) 0.3%

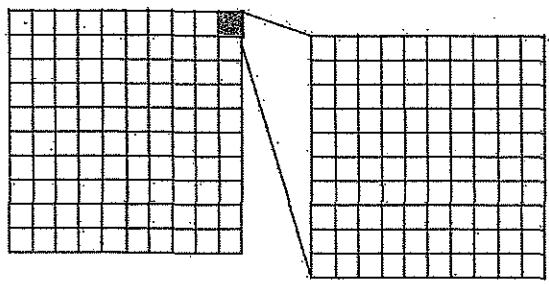


b) 120%

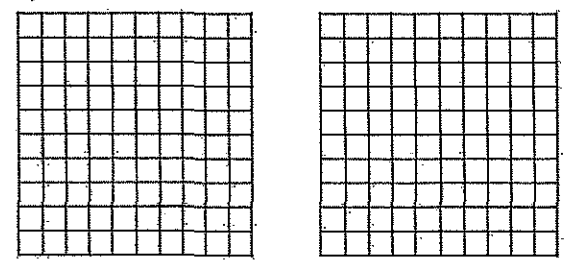


Practice 1 – Shade in the hundred charts to illustrate the percent

a) 0.25%



b) 195%



Using Percents to solve Problems

Example 1

1. If your best friend has 2400 songs on his/her iPod, and you have $\frac{3}{4}$ songs, how many songs do you have? Show your calculations.

$$\frac{3}{4} \times 100\% = 75\% \quad \text{So } 2400(0.75) = 1800 \text{ songs.}$$

2. What does "of" mean in math usually?

multiply

You can also use equivalent fractions $\frac{x}{2400} = \frac{75}{100}$

Example 2

3. The actual cost to make a new laptop is \$150, but the selling price is actually 150% of that. What is the selling price of the coat?

$$\frac{150}{100} = \frac{x}{150} \quad \text{or} \quad 1.5 \times 150 = 225 \text{ \$}$$

Practice

- 1) The cost to make a winter coat is \$70, but the selling price is actually 230% of that. What is the selling price of the coat?

$$\frac{230}{100} = \frac{x}{70} \quad x = 161 \text{ \$}$$

or $2.3 \times 70 = 161 \text{ \$}$

- 2) In 2004, the population of First Nations people living on reserves in Alberta was approximately 60,000. About 0.25% of these people belonged to the Cree band. About how many people belonged to this band?

$$\frac{0.25}{100} = \frac{x}{60000} \quad x = 150 \text{ people}$$

- 3) Initially, there were 120 infected by measles. By the second day, the infected population increased by 5%. How many people were infected in total on the second day? (Assume the people on the first day are still infected.)

$$\frac{5}{100} = \frac{x}{120} \quad x = 6$$

So 126 people!