

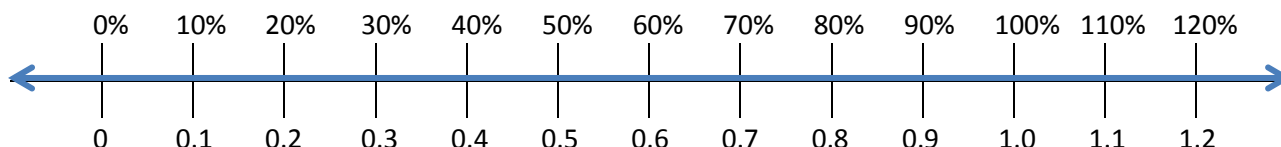
Converting Between Percentages and Decimals

PART A – Converting Decimals to Percentages

Decimal numbers, like whole numbers can be placed on a number line.

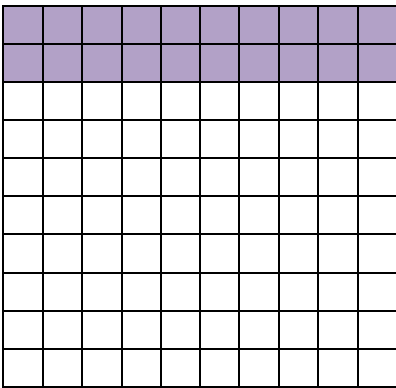
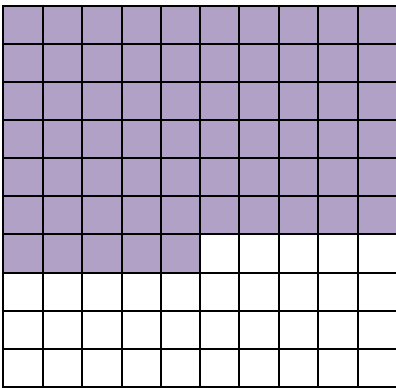
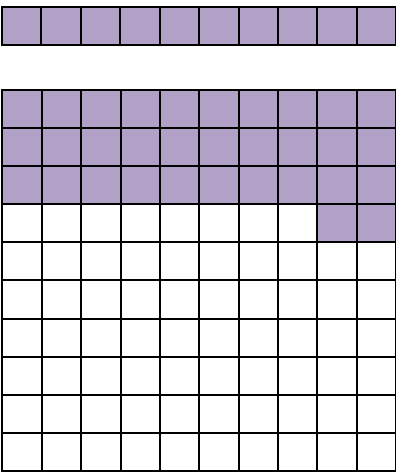
Since **100% = 1 whole**, numbers greater than zero (0) but less than one (1) are between zero (0%) and one hundred percent (100%).

Furthermore, numbers greater than one, are greater than one hundred percent (100%).



Thus, decimal numbers are converted to percentages by multiplying the decimal number by one hundred percent (100%).

Examples:

0.2	0.65	1.32
$0.2 \times 100\% = 20\%$	$0.65 \times 100\% = 65\%$	$1.32 \times 100\% = 132\%$
		
Twenty (20) out of the one hundred (100) squares are shaded.	Sixty five (65) out of the one hundred (100) squares are shaded.	One whole <i>AND</i> another thirty two (32) squares are shaded. In total, one hundred and thirty two (132) squares are shaded.

Converting Between Percentages and Decimals

PART B – Converting Percentages to Decimals

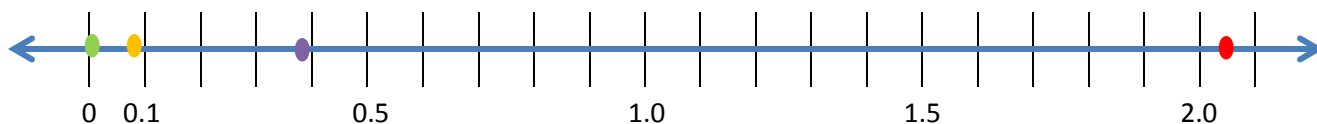
To convert a decimal number to a percentage, we **multiplied** the decimal number by one hundred percent (100%).

Thus, to convert a percentage to a decimal number, we **divide** the percentage by one hundred percent (100%).

Examples:

8% ●	39.5% ●	0.25% ●	205% ●
$8 \div 100 = 0.08$	$39.5 \div 100 = 0.395$	$0.25 \div 100 = 0.0025$	$205 \div 100 = 2.05$

These decimals and percentages can be placed on a number line.



Notes:

1. When multiplying a number by a power of ten (10, 100, 1000), move the decimal point to the right for as many zeros the power of ten has.

$$2.3 \times 10 = 23$$

$$2.3 \times 100 = 230$$

$$2.3 \times 1000 = 2300$$

2. When dividing a number by a power of ten (10, 100, 1000) move the decimal point to the left for as many zeros the power of ten has.

$$2.3 \div 10 = 0.23$$

$$2.3 \div 100 = 0.023$$

$$2.3 \div 1000 = 0.0023$$

Converting Between Percentages and Decimals

Exercises:

1. Convert the following decimals to percentages:

a) $0.58 =$

b) $0.013 =$

c) $1.87 =$

d) $32.5 =$

e) $0.23 =$

f) $0.203 =$

g) $0.5 =$

h) $4.05 =$

2. Convert the following percentages to decimal numbers and plot them on a number line:

a) $45\% =$



b) $80\% =$



c) $24.2\% =$



d) $901\% =$



e) $68.502\% =$



f) $0.05\% =$



Converting Between Percentages and Decimals

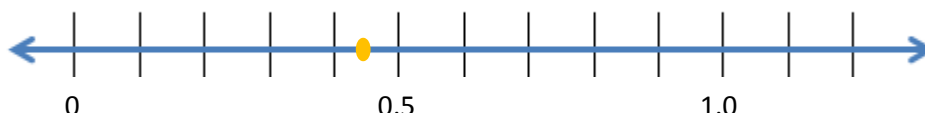
Solutions:

1. Convert the following decimals to percentages:

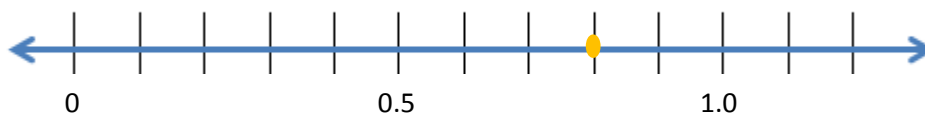
- a) $0.58 = 58\%$ b) $0.013 = 1.3\%$ c) $1.87 = 187\%$ d) $32.5 = 3250\%$
e) $0.23 = 23\%$ f) $0.203 = 20.3\%$ g) $0.5 = 50\%$ h) $4.05 = 405\%$

2. Convert the following percentages to decimal numbers and plot them on a number line:

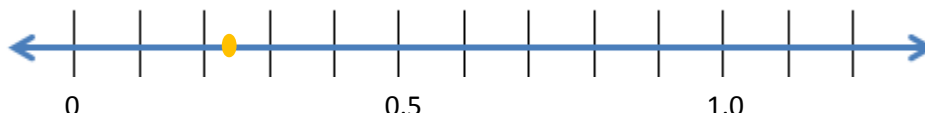
a) $45\% = 0.45$



b) $80\% = 0.8$



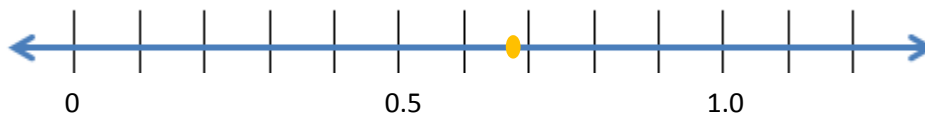
c) $24.2\% = 0.242$



d) $901\% = 9.01$



e) $68.502\% = 0.68502$



f) $0.05\% = 0.0005$

