

Name:

Math 9B

Date:

Unit 2: Percent**2.3 - Percent of a number****Vocabulary**

Percent benchmark - percents that have common or easy to use fractional equivalents.

% of #	Percent Benchmarks	% of #	% of #
100% = 1	25% = $\frac{1}{4} \div 4$	12.5% = $\frac{1}{8} \div 8$	33 $\frac{1}{3}$ % = $\frac{1}{3} \div 3$
10% = $\frac{1}{10} \div 10$	50% = $\frac{1}{2} \div 2$	20% = $\frac{1}{5} \div 5$	66 $\frac{2}{3}$ % = $\frac{2}{3} \div 3$ then $\times 2$
1% = $\frac{1}{100} \div 100$	75% = $\frac{3}{4} \div 4$ then $\times 3$		
0.1% = $\frac{1}{1000} \div 1000$			

Mental Math Methods**Example - use multiples of 10****Key Points**

0.2% of \$1000

↓
 0.1% + 0.1%
 $\$1 + \$1 = \$2$

0.1% of 1000 = 1

- 100% of 1000 is 1000 $\div 10$
- 10% of 1000 is 100 $\div 10$
- 1% of 1000 is 10 $\div 10$
- 0.1% of 1000 is 1
- 0.2% is just 2 x 0.1%

Try it out:

1.4% of 500

↓
 1% + 0.4%
 $5 + 2 = 7$

100% = 500
 10% = 50
 1% = 5
 0.1% = 0.5

0.4% is 4 groups of 0.1%
 → or $4 \times 0.5 = 2$

2.1% of 30,000

↓
 2% + 0.1%
 $300 + 300 + 30 = 630$

100% = 30,000
 10% = 3,000
 1% = 300 $\times 2$
 0.1% = 30 $\times 1$

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Example - break % down into pieces

Key Points

150% of \$5

↓

100% + 50%

100% of \$5 = \$5

50% of \$5 = \$2.50

"half"

$$\$5 + \$2.50 = \$7.50$$

- Break percent into separate benchmarks
- Find 100% of \$5 and 50% of \$5
- Add the two together

Try it out:

325% of 60L

300% + 25%

100% + 100% + 100% + 25%

$$60L + 60L + 60L + 15L = 195L$$

100% → 60L

25% → 15L

1/4

175% of \$400

100% + 75%

100% + 25% + 25% + 25%

$$\$400 + \$100 + \$100 + \$100 = \$700$$

100% → \$400
25% → \$100

Calculate % of a number

Example - convert to decimal and multiply

Key Points

38% of 350 people

$$\textcircled{1} \frac{38\%}{100} = 0.38$$

① • Turn percent into a decimal ÷ by 100

2 • Multiply decimal by the number

$$\textcircled{2} 0.38 \times 350 = 133 \text{ people.}$$

Try it out:

46% of 250L

$$0.46 \times 250L = 115L$$

107% of 685m

$$1.07 \times 685m = 732.95m$$

0.13% of \$2500

$$0.0013 \times \$2500 = \$3.25$$