



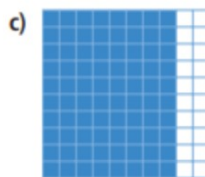
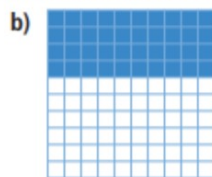
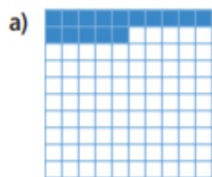
Warm Up Grade 8

Date: Oct 10

	✖ Out of 100	✖ Percent	Fraction	Decimal
a	231	231%	$\frac{231}{100} = 2 \frac{31}{100}$	2.31
b	17	17%	$\frac{17}{100}$	0.17
c	5	5%	$\frac{1}{20} \times \frac{5}{1} = \frac{5}{20} = \frac{1}{4}$	0.05
d	6	6%	$\frac{6}{100} = \frac{3}{50}$	0.06
e	74	74%	$\frac{74}{100} = \frac{37}{50}$	0.74

WS Solutions

1. What percent of each hundred chart is shaded?
Write each percent as a fraction and as a decimal.



a) $\frac{15}{100} = 15\% = 0.15$

b) $\frac{40}{100} = 40\% = 0.40$

c) $\frac{80}{100} = 80\% = 0.80$

2. Write each percent as a fraction and a decimal.
Sketch number lines to show how the numbers are related.

a) 2%

b) 9%

c) 28%

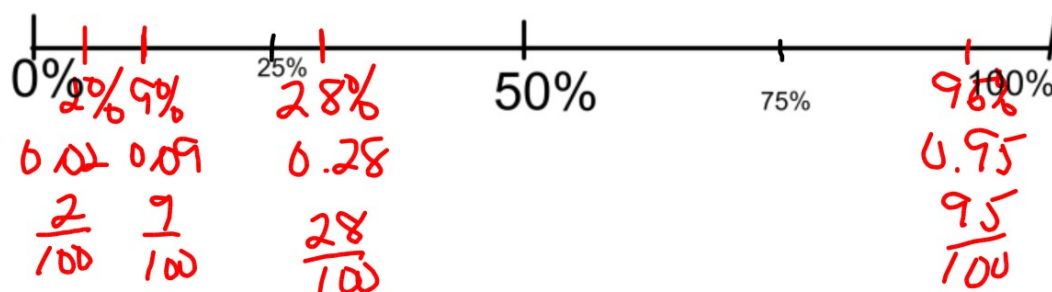
d) 95%

a) 2% 0.02 $\frac{2}{100} = \frac{1}{50}$

b) 9% 0.09 $\frac{9}{100} =$

c) 28% 0.28 $\frac{28}{100} = \frac{14}{50} = \frac{7}{25}$

d) 95% 0.95 $\frac{95}{100} = \frac{19}{20}$



WS Solutions

3. Write each fraction as a decimal and a percent.

a) $\frac{2}{10} \xrightarrow{\times 10} \frac{20}{100}$ b) $\frac{3}{50} \xrightarrow{\times 2} \frac{6}{100}$ c) $\frac{4}{25} \xrightarrow{\times 4} \frac{16}{100}$ d) $\frac{13}{20} \xrightarrow{\times 5} \frac{65}{100}$ e) $\frac{4}{5} \xrightarrow{\times 20} \frac{80}{100}$

3 a) $\frac{2}{10} = 0.2$ or 20%

b) $\frac{3}{50} = \frac{6}{100}$ 0.06 or 6%

c) $\frac{4}{25} = \frac{16}{100}$ 0.16 or 16%

d) $\frac{13}{20} = \frac{65}{100}$ 0.65 or 65%

e) $\frac{4}{5} = \frac{80}{100}$ 0.80 or 80%

4. Fred had 8 out of 10 on a test. Janet had 82% on the test.
Who did better? How do you know?



4. Fred $\frac{8}{10} = \frac{80}{100} = 80\%$

0.8

Janet 82%

0.82

Janet did better since $82 > 80$

since $0.82 > 0.8$

Ws Grade 8 Extra practice Fraction decimal percent

Solutions

1. Write each fraction as a decimal and a percent.

a) $\frac{21}{35}$

b) $\frac{14}{20}$

c) $\frac{28}{56}$

d) $\frac{12}{16}$

e) $\frac{18}{200}$

f) $\frac{19}{20}$

g) $\frac{16}{25}$

h) $\frac{32}{40}$

i) $\frac{9}{50}$

j) $\frac{9}{10}$

$$1a) \frac{21}{35} \stackrel{\div 7}{=} \frac{3}{5} \stackrel{\times 20}{=} \frac{60}{100} = 60\% \quad 0.60$$

$$b) \frac{14}{20} \stackrel{\times 5}{=} \frac{70}{100} = 70\% \quad 0.70$$

$$c) \frac{28}{56} \stackrel{\div 28}{=} \frac{1}{2} \stackrel{\times 50}{=} \frac{50}{100} = 50\% \quad 0.50$$

$$d) \frac{12}{16} \stackrel{\div 4}{=} \frac{3}{4} \stackrel{\times 25}{=} \frac{75}{100} = 75\% \quad 0.75$$

$$e) \frac{18}{200} \stackrel{\div 2}{=} \frac{9}{100} = 9\% \quad 0.09$$

$$f) \frac{19}{20} \stackrel{\times 5}{=} \frac{95}{100} = 95\% \quad 0.95$$

$$g) \frac{16}{25} \stackrel{\times 4}{=} \frac{64}{100} = 64\% \quad 0.64$$

$$h) \frac{32}{40} \stackrel{\div 4}{=} \frac{8}{10} \stackrel{\times 10}{=} \frac{80}{100} = 80\% \quad 0.80$$

$$i) \frac{9}{50} \stackrel{\times 2}{=} \frac{18}{100} = 18\% \quad 0.18$$

$$j) \frac{9}{10} \stackrel{\times 10}{=} \frac{90}{100} = 90\% \quad 0.90$$

2. Ruth's test scores were: $\frac{17}{20}$, $\frac{21}{28}$, and $\frac{40}{50}$.
 Write each test score as a percent.
 Order the test scores from greatest to least.
 Which was Ruth's best test? How do you know?

2. Ruth

$$\frac{17}{20} = \frac{85}{100} = 85\%$$

$$\frac{21}{28} = \frac{3}{4} = \frac{75}{100} = 75\%$$

$$\frac{40}{50} = \frac{80}{100} = 80\%$$

The best test was $\frac{17}{20}$, it is the highest percentage

3. Write each percent as a fraction and a decimal.
 Sketch number lines to show how the numbers are related.
 a) 18% b) 37% c) 86% d) 99%

3. 18%

a) 0.18

$$\frac{18}{100} = \frac{9}{50}$$

b) 37%

0.37

$$\frac{37}{100}$$

c) 86%

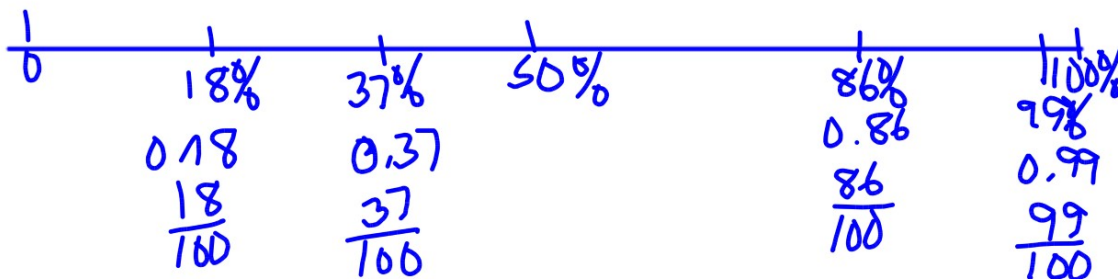
0.86

$$\frac{86}{100} = \frac{43}{50}$$

d) 99%

0.99

$$\frac{99}{100}$$



4. In 5 min, Benjamin completed 27 of 30 multiple-choice questions.
Madison completed 83% of the questions.
Who completed more questions?
How do you know?

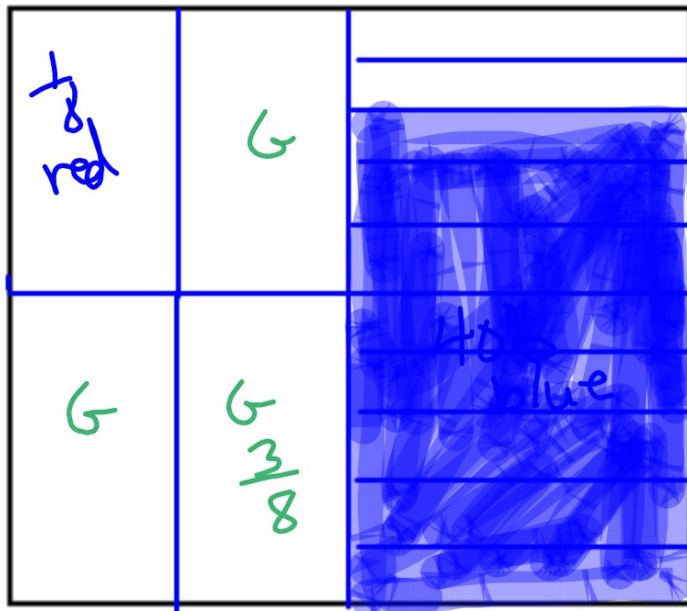
4. Ben $\frac{27}{30} = \frac{9}{10}$ or $\frac{90}{100}$ 90%

Madison 83%

Ben completed more.

5. Barney created a design on a grid.
He coloured $\frac{1}{8}$ of the grid red.
He coloured 0.375 of the grid green.
He coloured 40% of the grid blue.
He coloured the rest of the grid purple.
What percent of the grid is purple?
How do you know?

5.



0.375
 $\frac{375}{1000} = \frac{3}{8}$ green

Mentally Calculating Percents


There are percents that you can find without the use of a calculator.

You can always find **100%** of number, because your answer will be the number itself.

$$\underline{100\% \text{ of } 342 = 342}$$

You can find **10%** of a number, by dividing the number by 10. 

$$\underline{10\% \text{ of } 140 = 14}$$

You can find **1%** of a number, by dividing the number by 100. 

$$\underline{1\% \text{ of } 850 = 8.5}$$

You can find **50%** of a number by dividing the number by 2.

$$\underline{50\% \text{ of } 64 = 32}$$

You can find **25%** of a number by dividing the number by 4.

$$\underline{25\% \text{ of } 44 = 11}$$

$$\frac{25}{100} = \frac{1}{4}$$

$$10\% \text{ of } 12 = 1.2$$

$12 \div 10$

$$10\% \text{ of } 156.5 = 15.65$$

$$10\% \text{ of } 45.23 = 4.523$$

Have students put
examples on back of
sheet

How can you mentally calculate 20% of a number?

Find 10% of the number, then multiply your answer by 2.

$$\begin{array}{l} \text{20\% of 65} \\ \text{10\% of 65} = 6.5 \\ \times 2 \\ \hline \text{20\% of 65} = 13 \end{array}$$

How can you mentally calculate 30% of a number?

Find 10% of the number, then multiply your answer by 3.

$$\begin{array}{l} \text{30\% of 90} = \\ \text{10\% of 90} = 9 \\ \times 3 \\ \hline \text{30\% of 90} = 27 \end{array}$$

How can you mentally calculate 70% of a number?

Find 10% of the number, then multiply your answer by 7.

How can you mentally calculate 2% of a number?

Find 1% of the number, then multiply it by 2.

$$\begin{array}{l} \text{2\% of 25} \\ \text{1\% of 25} = 0.25 \\ \times 2 \\ \hline \text{2\% of 25} = 0.50 \end{array}$$

How can you mentally calculate 75% of a number?

Find 25% of the number, then multiply your answer by 3.

$$\begin{array}{l} \text{75\% of 240} = \\ \text{25\% of 240} = 60 \\ \times 3 \\ \hline \text{75\% of 240} = 180 \end{array}$$

How can you find 5% of a number?

Find 10% of the number, then divide your answer by 2.

How can you find 15% of a number?

Find 10% of the number, then find 5% of the number and add your 2 answers.

How can you find 11% of a number?

Find 10% of the number, find 1% of the number, then add your answers

Mentally calculate the following:

(a) 10 % of 90

(like $\div 10$)

$= 9$

(b) 50 % of 42

(like $\div 2$)

$= 21$

(c) 25% of 60

(like $\div 4$)

$= 15$

(d) 20% of 66

$$\begin{array}{r} 10\% \text{ of } 66 = 6.6 \\ \times 2 \\ \hline 20\% \text{ of } 66 = 13.2 \end{array}$$

(e) 75 % of 24

$$\begin{array}{r} 25\% \text{ of } 24 = 6 \\ \times 3 \\ \hline 75\% \text{ of } 24 = 18 \end{array}$$

(f) 15% of 80

$$\begin{array}{r} 10\% \text{ of } 80 = 8 \\ 5\% \text{ of } 80 = 4 \\ \hline 15\% \text{ of } 80 = 12 \end{array}$$

(g) 1 % of 38

$= 0.38$

(h) 10% of 75

$= 7.5$

(i) 11% of 120

$$\begin{array}{r} 10\% \text{ of } 120 = 12 \\ 1\% \text{ of } 120 = 1.2 \\ \hline 11\% \text{ of } 120 = 13.2 \end{array}$$

(j) 30% of 15

$$\begin{array}{r} 10\% \text{ of } 15 = 1.5 \\ \times 3 \\ \hline 30\% \text{ of } 15 = 4.5 \end{array}$$

(k) 2% of 400

$$\begin{array}{r} 1\% \text{ of } 400 = 4 \\ \times 2 \\ \hline 2\% \text{ of } 400 = 8 \end{array}$$

(l) 5% of 150

$$\begin{array}{r} 10\% \text{ of } 150 = 15 \\ \div 2 \\ \hline 5\% \text{ of } 150 = 7.5 \end{array}$$

Mentally calculate the following:

(a) 10 % of 90 = 9

Rule $\div 10$

(b) 50 % of 42 = 21

Rule $\div 2$

(c) 25% of 60 = 15

Rule \div by 4

(d) 20% of 66

$$\begin{array}{r} 10\% \text{ of } 66 = 6.6 \\ \times 2 \\ \hline 20\% \text{ of } 66 = 13.2 \end{array}$$

(e) 75 % of 24

$$\begin{array}{r} 25\% \text{ of } 24 = 6 \\ \times 3 \\ \hline 75\% \text{ of } 24 = 18 \end{array}$$

(f) 15% of 80

$$\begin{array}{r} 10\% \text{ of } 80 = 8 \\ 5\% \text{ of } 80 = 4 \\ \hline 15\% \text{ of } 80 = 12 \end{array}$$

(g) 1 % of 38 = 0.38

(h) 10% of 75 = 7.5

(i) 11% of 120

$$\begin{array}{r} 10\% \text{ of } 120 = 12 \\ 1\% \text{ of } 120 = 1.2 \\ \hline 11\% \text{ of } 120 = 13.2 \end{array}$$

(j) 30% of 15

$$\begin{array}{l} 10\% \text{ of } 15 = 1.5 \\ 30\% \text{ of } 15 = 4.5 \end{array}$$

(k) 2% of 400

$$\begin{array}{r} 1\% \text{ of } 400 = 4 \\ \times 2 \\ \hline 2\% \text{ of } 400 = 8 \end{array}$$

(l) 5% of 150

$$\begin{array}{r} 10\% \text{ of } 150 = 15 \\ 5\% \text{ of } 150 = 7.5 \end{array}$$