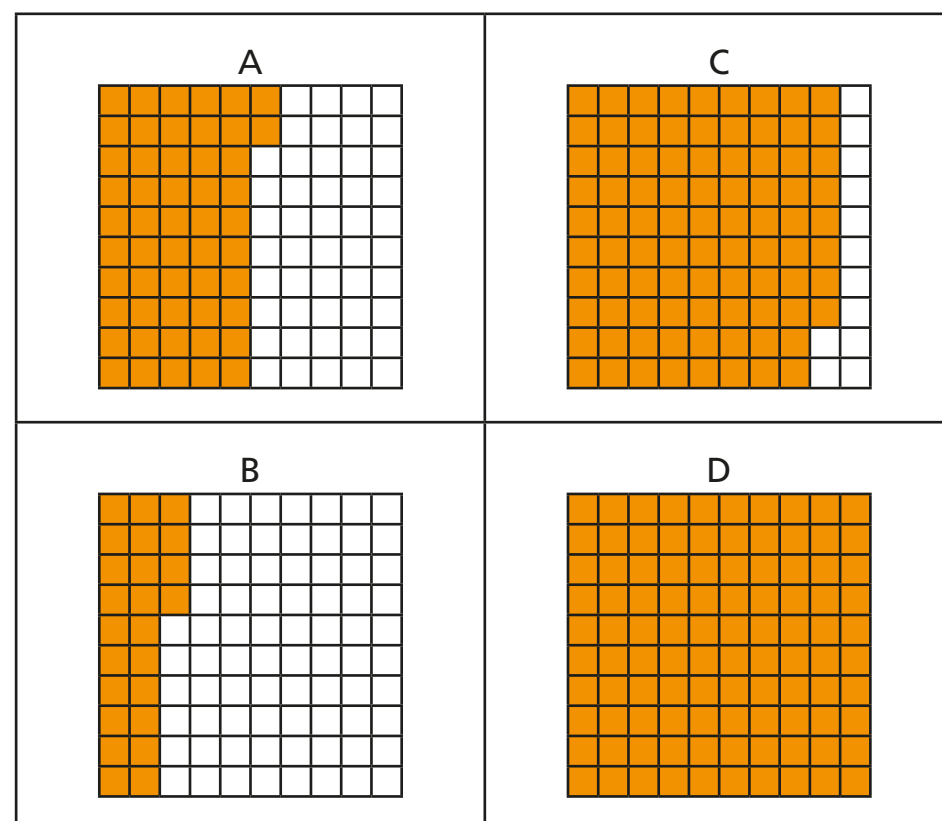


Percentages as fractions and decimals

1 Here are four hundred squares.

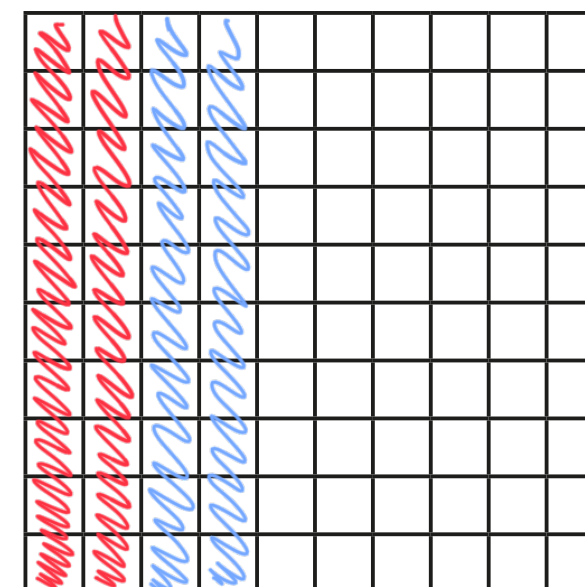


Complete the table.

Hundred square	Percentage	Fraction	Decimal
A	52%	$\frac{52}{100}$	0.52
B	24%	$\frac{24}{100}$	0.24
C	88%	$\frac{88}{100}$	0.88
D	100%	$\frac{100}{100}$	1

2 Prove that 0.2 is equal to 20%.

You may use the hundred square to help you.



$$0.2 = 2 \text{ tenths} = \frac{2}{10} = \frac{20}{100}$$

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

Why do you think some people think that 0.2 is equal to 2%?

3 Complete the fraction, decimal and percentage equivalents.

a) $32\% = \frac{32}{100} = 0.32$

$35\% = \frac{35}{100} = 0.35$

$48\% = \frac{48}{100} = 0.48$

c) $0.29 = \frac{29}{100} = 29\%$

$0.71 = \frac{71}{100} = 71\%$

$0.03 = \frac{3}{100} = 3\%$

b) $\frac{17}{100} = \frac{17}{100} = 17\% = 0.17$

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

$\frac{90}{100} = \frac{90}{100} = 90\% = 0.9$

4 Write <, > or = to complete the statements.

- a) 50% $\bigcirc$ $\frac{5}{100}$ d) $\frac{40}{100}$ $\bigcirc$ 40%
- b) 25% $\bigcirc$ $\frac{50}{100}$ e) $\frac{70}{100}$ $\bigcirc$ 7%
- c) 14% $\bigcirc$ $\frac{41}{100}$ f) 82% $\bigcirc$ $\frac{82}{100}$

5 Write the values in order from smallest to greatest.

- a) 33% $\frac{30}{100}$ 3% $\frac{13}{100}$
3%, $\frac{13}{100}$, $\frac{30}{100}$, 33%
- b) 299% $\frac{91}{100}$ 9% $\frac{9}{10}$
9%, $\frac{9}{10}$, $\frac{91}{100}$, 299%
- c) 2.5 $\frac{25}{100}$ 250 25% of 100 $\frac{25}{1000}$
 $\frac{25}{1000}$, $\frac{25}{100}$, 2.5, 25% of 100, 250

6 Convert the fractions to hundredths.

Complete the decimal and percentage equivalents.

- a) $\frac{150}{300} = \frac{50}{100} = 0.5 = 50\%$
- b) $\frac{25}{500} = \frac{5}{100} = 0.05 = 5\%$
- c) $\frac{48}{300} = \frac{16}{100} = 0.16 = 16\%$

- d) $\frac{18}{50} = \frac{36}{100} = 0.36 = 36\%$
- e) $\frac{13}{25} = \frac{52}{100} = 0.52 = 52\%$

7 Circle all the fractions that are greater than or equal to 50%.

$\frac{10}{50}$	$\frac{4}{5}$	$\frac{50}{100}$
$\frac{30}{80}$	$\frac{1}{50}$	$\frac{70}{140}$

8 Jack and Dora go shopping with the same amount of money.

Jack spends $\frac{1}{3}$ of his money.

Dora spends 30% of her money.

a) Who spends more money? Jack

Use fraction and percentage equivalence to explain your answer.

$$\frac{1}{3} = \frac{10}{30}$$

$$30\% = \frac{3}{10} = \frac{9}{30}$$

b) Jack and Dora each started with £300

How much money do they each have left?

Jack £200 Dora £210