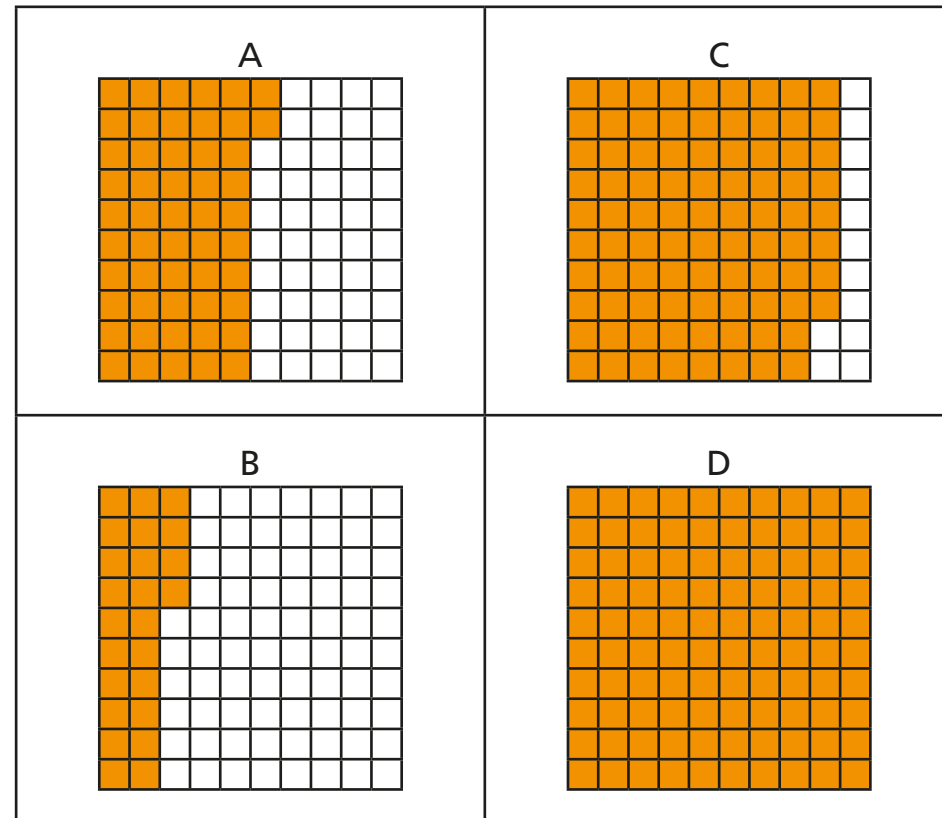


# Percentages as fractions and decimals

1 Here are four hundred squares.

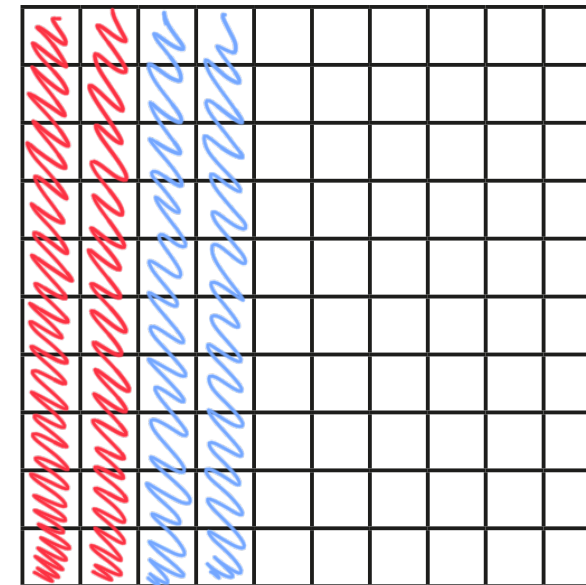


Complete the table.

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

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

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

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

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

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

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

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

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  $\pounds 200$       Dora  $\pounds 210$