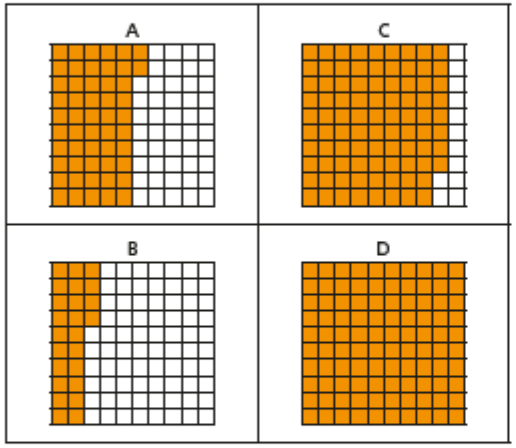
Percentages as fractions and decimals

1 Here are four hundred squares.

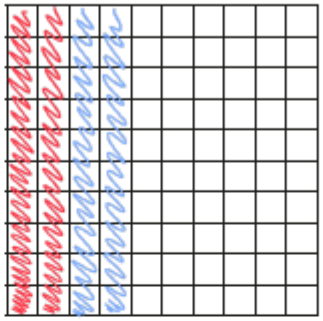


Complete the table.

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 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

b) $\frac{17}{100}$ = 17 % = 0·17

$\frac{9}{100}$ = 9 % = 0·09

$\frac{90}{100}$ = 90 % = 0·9

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

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

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

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

a) 50% (>) $\frac{5}{100}$

b) 25% (<) $\frac{50}{100}$

c) 14% (<) $\frac{41}{100}$

d) $\frac{40}{100}$ (=) 40%

e) $\frac{70}{100}$ (>) 7%

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 £200 Dora £210