

## Percentages to Decimals 121

Question 1: Convert each of the following percentages to decimals

- |         |         |         |         |
|---------|---------|---------|---------|
| (a) 53% | (b) 19% | (c) 25% | (d) 74% |
| (e) 65% | (f) 50% | (g) 70% | (h) 10% |
| (i) 90% | (j) 3%  | (k) 8%  | (l) 5%  |
| (m) 57% | (n) 88% | (o) 36% | (p) 99% |

Question 2: Convert each of the following percentages to decimals

- |             |            |            |            |
|-------------|------------|------------|------------|
| (a) 15.2%   | (b) 23.5%  | (c) 90.3%  | (d) 62.81% |
| (e) 1.7%    | (f) 6.8%   | (g) 8.15%  | (h) 0.5%   |
| (i) 0.49%   | (j) 0.03%  | (k) 49.68% | (l) 0.598% |
| (m) 64.553% | (n) 80.05% |            |            |

Question 3: Convert each of the following percentages to decimals

- |            |            |           |           |
|------------|------------|-----------|-----------|
| (a) 162%   | (b) 190%   | (c) 115%  | (d) 144%  |
| (e) 150%   | (f) 212%   | (g) 285%  | (h) 538%  |
| (i) 102.5% | (j) 352.8% | (k) 1047% | (l) 2938% |

### Apply

Question 1: Match up any decimal and percentage that are equivalent.  
Not all the decimals and percentages will match up.

80%

0.08

25%

0.25

8%

2.5

250%

0.03

30%

0.8

Question 2: Arrange in order from largest to smallest.

- (a) 21%, 0.25, 16%, 0.2, 3%
- (b) 64%, 0.05, 100%, 0.99, 1.25, 3%

Question 3: James says "1.45 is equal to 145%"  
Matt says "that is impossible, you cannot have a percentage greater than 100%"  
Who do you agree with? Explain your answer.

## Percentages to Fractions 122

Question 1: Write each of the following percentages as fractions.  
If possible, simplify each answer.

- |         |         |         |         |
|---------|---------|---------|---------|
| (a) 3%  | (b) 14% | (c) 66% | (d) 10% |
| (e) 17% | (f) 30% | (g) 50% | (h) 25% |
| (i) 15% | (j) 29% | (k) 16% | (l) 44% |
| (m) 99% | (n) 85% | (o) 52% | (p) 80% |
| (q) 60% | (r) 20% | (s) 5%  | (t) 72% |
| (u) 98% | (v) 2%  | (w) 88% | (x) 15% |

Question 2: Write each of the following percentages as fractions.  
If possible, simplify each answer.

- |          |          |          |          |
|----------|----------|----------|----------|
| (a) 111% | (b) 130% | (c) 150% | (d) 110% |
| (e) 125% | (f) 165% | (g) 160% | (h) 144% |
| (i) 240% | (j) 390% | (k) 358% | (l) 820% |

Question 3: Write each of the following percentages as fractions.  
If possible, simplify each answer.

- |           |           |            |           |
|-----------|-----------|------------|-----------|
| (a) 12.5% | (b) 0.2%  | (c) 1.8%   | (d) 15.2% |
| (e) 30.5% | (f) 87.4% | (g) 31.25% | (h) 0.28% |

10% of the world are left handed.  
What fraction of the world are right handed?



32% of people voted for the Yellow Party in an election.  
What fraction of people voted for the Yellow Party?

Rebecca spent 85% of her pocket money this week.  
What fraction of her pocket money did she spend?

Neil got 52% of questions correct on a test.  
What fraction of questions did he get correct?

In a school, students either study French, German or Spanish.

They study one language each.

11% of students study French

27% of students study Spanish

What fraction of the students study German?



## Decimals to Fractions 123 - 124

Question 1: Convert the following decimals to fractions, in their simplest forms

- |          |          |          |          |
|----------|----------|----------|----------|
| (a) 0.5  | (b) 0.3  | (c) 0.7  | (d) 0.1  |
| (e) 0.8  | (f) 0.2  | (g) 0.9  | (h) 0.6  |
| (i) 0.13 | (j) 0.22 | (k) 0.31 | (l) 0.12 |
| (m) 0.42 | (n) 0.89 | (o) 0.15 | (p) 0.84 |
| (q) 0.25 | (r) 0.02 | (s) 0.45 | (t) 0.07 |
| (u) 0.92 | (v) 0.95 | (w) 0.16 | (x) 0.83 |

Question 2: Write the following decimals as fractions, in their simplest forms

- |            |            |            |            |
|------------|------------|------------|------------|
| (a) 0.123  | (b) 0.402  | (c) 0.676  | (d) 0.888  |
| (e) 0.195  | (f) 0.625  | (g) 0.225  | (h) 0.1234 |
| (i) 0.5005 | (j) 0.2244 | (k) 0.9702 | (l) 0.7007 |

Question 3: Convert the following decimals to fractions, in their simplest forms

- |          |          |          |          |
|----------|----------|----------|----------|
| (a) 1.3  | (b) 1.9  | (c) 1.4  | (d) 1.5  |
| (e) 2.5  | (f) 3.9  | (g) 8.5  | (h) 1.12 |
| (i) 1.75 | (j) 1.72 | (k) 2.75 | (l) 3.55 |

Danny has tried to complete his homework.  
Can you spot any mistakes?

**Q1** Write 0.6 as a fraction.  
Give your answer in its simplest form.

$$\frac{6}{10}$$

**Q2** Write 0.08 as a fraction.  
Give your answer in its simplest form.

$$\frac{2}{50}$$

**Q3** Write 0.902 as a fraction.  
Give your answer in its simplest form.

$$\frac{46}{500} = \frac{23}{250}$$

## Decimals to Percentages 125

Question 1: Convert the following decimals to percentages

- (a) 0.25      (b) 0.75      (c) 0.13      (d) 0.88  
(e) 0.49      (f) 0.92      (g) 0.61      (h) 0.07  
(i) 0.03      (j) 0.44      (k) 0.5      (l) 0.9  
(m) 0.72      (n) 0.8      (o) 0.01      (p) 0.36

Question 2: Convert the following decimals to percentages

- (a) 0.125      (b) 0.953      (c) 0.382      (d) 0.603  
(e) 0.075      (f) 0.021      (g) 0.1425      (h) 0.9682  
(i) 0.003      (j) 0.072      (k) 0.844      (l) 0.7003

Question 3: Convert the following recurring decimals to percentages

- (a) 0.3333...      (b) 0.6666...      (c) 0.474747...      (d) 0.808080...  
(e)  $0.\dot{8}$       (f)  $0.\dot{1}$       (g)  $0.\dot{5}\dot{2}$       (h)  $0.\dot{1}\dot{2}\dot{3}$

Question 4: Convert the following decimals to percentages

- (a) 1.63      (b) 1.25      (c) 1.8      (d) 1.01  
(e) 2.5      (f) 2.97      (g) 3.15      (h) 3.82

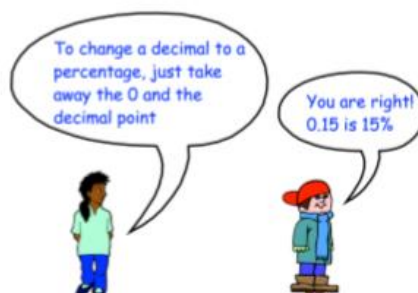
Question 1: Match up any decimal and percentage that are equivalent.  
Not all the decimals and percentages will match up

- |      |      |
|------|------|
| 40%  | 0.04 |
| 15%  | 0.3  |
| 4%   | 1.5  |
| 150% | 0.4  |
| 30%  | 0.9  |

Question 2: Arrange in order from smallest to largest

- (a) 0.4, 20%, 0.5, 45%, 0.09  
(b) 0.59, 85%, 20%, 0.8, 13%  
(c) 29%, 0.3, 35%, 0.33, 25%

Question 3: Jessica and Daniel are incorrect.  
Explain why.



## Fractions to Percentages 126

Question 1: Convert the following fractions into percentages.

(a)  $\frac{9}{50}$       (b)  $\frac{3}{10}$       (c)  $\frac{4}{5}$       (d)  $\frac{12}{25}$

(e)  $\frac{3}{4}$       (f)  $\frac{9}{10}$       (g)  $\frac{36}{50}$       (h)  $\frac{13}{20}$

(i)  $\frac{1}{5}$       (j)  $\frac{3}{20}$       (k)  $\frac{24}{25}$       (l)  $\frac{7}{10}$

(m)  $\frac{17}{20}$       (n)  $\frac{13}{10}$       (o)  $\frac{184}{200}$       (p)  $\frac{39}{300}$

Question 2: Convert the following fractions into percentages.

(a)  $\frac{3}{8}$       (b)  $\frac{32}{40}$       (c)  $\frac{13}{200}$       (d)  $\frac{7}{8}$

(e)  $\frac{7}{40}$       (f)  $\frac{5}{8}$       (g)  $\frac{48}{60}$       (h)  $\frac{60}{400}$

(i)  $\frac{171}{200}$       (j)  $\frac{52}{80}$       (k)  $\frac{19}{40}$       (l)  $\frac{57}{40}$

Question 3: Convert the following fractions into percentages.

(a)  $\frac{1}{8}$       (b)  $\frac{17}{40}$       (c)  $\frac{5}{16}$       (d)  $\frac{53}{400}$

(e)  $\frac{38}{125}$       (f)  $\frac{15}{16}$       (g)  $\frac{7}{32}$       (h)  $\frac{10}{64}$

Question 4: Convert the following fractions into percentages.

(a)  $\frac{2}{3}$       (b)  $\frac{4}{9}$       (c)  $\frac{4}{15}$       (d)  $\frac{5}{6}$

(e)  $\frac{11}{30}$       (f)  $\frac{7}{12}$       (g)  $\frac{8}{33}$       (h)  $\frac{2}{7}$

(i)  $\frac{9}{22}$       (j)  $\frac{5}{14}$       (k)  $\frac{28}{45}$       (l)  $\frac{19}{15}$

Helen takes 25 shots at basketball training.  
She misses 7 shots.



What percentage of the shots did Helen miss?

There are 40 passengers on a bus.  
14 passengers are going to Newport.

What percentage of the passengers are going to Newport?

Randalstown Rugby Club play 8 matches and win 7 of the matches.  
What percentage of the matches did Randalstown win?

Freddy sits a physics test.  
He gets 38 out of 40 correct.  
What percentage did he get right?



There are 500 students at a school.  
141 of the students study Spanish.  
What percentage of the students study Spanish?



## Fractions to Decimals 127 - 128

Question 1: Convert the following fractions to decimals.

- (a)  $\frac{1}{2}$    (b)  $\frac{1}{4}$    (c)  $\frac{3}{4}$    (d)  $\frac{1}{5}$    (e)  $\frac{3}{5}$    (f)  $\frac{4}{5}$
- (g)  $\frac{1}{10}$    (h)  $\frac{3}{10}$    (i)  $\frac{7}{10}$    (j)  $\frac{9}{10}$    (k)  $\frac{67}{100}$    (l)  $\frac{99}{100}$

Question 2: Convert the following fractions to decimals.

- (a)  $\frac{1}{8}$    (b)  $\frac{7}{20}$    (c)  $\frac{5}{8}$    (d)  $\frac{3}{20}$    (e)  $\frac{3}{25}$    (f)  $\frac{7}{8}$
- (g)  $\frac{19}{20}$    (h)  $\frac{43}{50}$    (i)  $\frac{1}{3}$    (j)  $\frac{9}{200}$    (k)  $\frac{9}{40}$    (l)  $\frac{13}{20}$
- (m)  $\frac{2}{3}$    (n)  $\frac{123}{200}$    (o)  $\frac{21}{40}$    (p)  $\frac{401}{500}$    (q)  $\frac{161}{200}$    (r)  $\frac{3}{8}$
- (s)  $\frac{1}{9}$    (t)  $\frac{19}{50}$    (u)  $\frac{51}{80}$    (v)  $\frac{11}{80}$    (w)  $\frac{5}{9}$

Question 3: Convert the following fractions to decimals.

- (a)  $\frac{3}{2}$    (b)  $\frac{5}{4}$    (c)  $\frac{11}{2}$    (d)  $\frac{9}{5}$    (e)  $\frac{53}{20}$    (f)  $\frac{177}{100}$

Which is larger, 0.65 or  $\frac{3}{5}$  ?

Explain your answer.

Arrange in order, from smallest to largest.



In 2015,  $\frac{13}{20}$  of adults in the UK owned a smart phone.

Write  $\frac{13}{20}$  as a decimal.

Leon has completed his homework.  
Can you spot any mistakes?

Write  $\frac{4}{5}$  as a decimal.

$$\begin{array}{r} 1.25 \\ 4 \overline{) 5.00} \\ \underline{4} \phantom{00} \\ 10 \phantom{0} \\ \underline{8} \phantom{0} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

Answer: 1.25

Write  $\frac{3}{20}$  as a decimal.

$$\begin{array}{r} 0.105 \\ 20 \overline{) 3.000} \\ \underline{20} \phantom{00} \\ 10 \phantom{0} \\ \underline{20} \phantom{0} \\ 0 \phantom{0} \\ \underline{0} \\ 0 \end{array}$$

Answer: 0.105