

Mathletics

# Percentage Calculation Worksheets



Teacher Solutions

Year 8

# Percentage Calculations

## Page 2 questions

### Fractions and percentages

1 a  $\frac{3}{100} = \boxed{3} \%$  b  $\frac{41}{100} = \boxed{41} \%$  c  $\frac{110}{100} = \boxed{110} \%$  d  $\frac{200}{100} = \boxed{200} \%$

2 a  $7\% = \frac{\boxed{7}}{\boxed{100}}$  b  $89\% = \frac{\boxed{89}}{\boxed{100}}$  c  $117\% = \frac{\boxed{117}}{\boxed{100}}$  d  $336\% = \frac{\boxed{336}}{\boxed{100}}$

3 a  $20\% = \frac{\boxed{20}}{\boxed{100}} = \frac{\boxed{1}}{\boxed{5}}$  Simplified b  $15\% = \frac{\boxed{15}}{\boxed{100}} = \frac{\boxed{3}}{\boxed{20}}$  Simplified c  $80\% = \frac{\boxed{80}}{\boxed{100}} = \frac{\boxed{4}}{\boxed{5}}$  Simplified

d  $24\% = \frac{\boxed{24}}{\boxed{100}} = \frac{\boxed{6}}{\boxed{25}}$  Simplified e  $42\% = \frac{\boxed{42}}{\boxed{100}} = \frac{\boxed{21}}{\boxed{50}}$  Simplified f  $96\% = \frac{\boxed{96}}{\boxed{100}} = \frac{\boxed{24}}{\boxed{25}}$  Simplified

g  $125\% = \frac{\boxed{125}}{\boxed{100}} = \frac{\boxed{5}}{\boxed{4}}$  Simplified improper h  $180\% = \frac{\boxed{180}}{\boxed{100}} = \frac{\boxed{9}}{\boxed{5}}$  Simplified improper i  $350\% = \frac{\boxed{350}}{\boxed{100}} = \frac{\boxed{7}}{\boxed{2}}$  Simplified improper

4 a  $\frac{24}{300} = \frac{24 \div \boxed{3}}{300 \div \boxed{3}} = \frac{\boxed{8}}{\boxed{100}} = \boxed{8} \%$  b  $\frac{48}{200} = \frac{48 \div \boxed{2}}{200 \div \boxed{2}} = \frac{\boxed{24}}{\boxed{100}} = \boxed{24} \%$  c  $\frac{175}{500} = \frac{175 \div \boxed{5}}{500 \div \boxed{5}} = \frac{\boxed{35}}{\boxed{100}} = \boxed{35} \%$

# Percentage Calculations

## Page 3 questions

### Fractions and percentages

5 a  $\frac{3}{10} = \frac{3 \times 10}{10 \times 10}$   
 $= \frac{30}{100}$   
 $= 30\%$

b  $\frac{12}{25} = \frac{12 \times 4}{25 \times 4}$   
 $= \frac{48}{100}$   
 $= 48\%$

c  $\frac{6}{5} = \frac{6 \times 20}{5 \times 20}$   
 $= \frac{120}{100}$   
 $= 120\%$

6 a  $3\frac{1}{2} = \frac{7 \times 50}{2 \times 50}$   
 $= \frac{350}{100}$   
 $= 350\%$

b  $2\frac{1}{4} = \frac{9 \times 25}{4 \times 25}$   
 $= \frac{225}{100}$   
 $= 225\%$

c  $1\frac{2}{5} = \frac{7 \times 20}{5 \times 20}$   
 $= \frac{140}{100}$   
 $= 140\%$

7 a  $\frac{1}{2} = 50\%$

b  $\frac{1}{5} = 20\%$

c  $\frac{8}{25} = 32\%$

d  $\frac{13}{50} = 26\%$

e  $\frac{5}{2} = 250\%$

f  $\frac{15}{20} = 75\%$

8 a  $2\frac{2}{5} = \frac{12}{5} = 240\%$

b  $3\frac{3}{4} = \frac{15}{4} = 375\%$

c  $1\frac{7}{20} = \frac{27}{20} = 135\%$

d  $4\frac{9}{25} = \frac{109}{25} = 436\%$

# Percentage Calculations

## Page 4 questions

### Fractions and percentages

9 a  $\frac{13}{500} = \frac{2.6}{100} = 2.6\% = 2\frac{3}{5}\%$

Decimal      Mixed numeral

b  $\frac{30}{800} = \frac{3.75}{100} = 3.75\% = 3\frac{3}{4}\%$

Decimal      Mixed numeral

c  $\frac{17}{400} = \frac{4.25}{100} = 4.25\% = 4\frac{1}{4}\%$

Decimal      Mixed numeral

d  $\frac{26}{500} = \frac{5.2}{100} = 5.2\% = 5\frac{1}{5}\%$

Decimal      Mixed numeral

e  $\frac{47}{500} = \frac{9.4}{100} = 9.4\% = 9\frac{2}{5}\%$

Decimal      Mixed numeral

f  $\frac{42}{400} = \frac{10.5}{100} = 10.5\% = 10\frac{1}{2}\%$

Decimal      Mixed numeral

10 a  $\frac{3}{200} = \frac{1.5}{100} = 1.5\% = \frac{3}{2}\%$

Decimal      Improper fraction

b  $\frac{7}{500} = \frac{1.4}{100} = 1.4\% = \frac{7}{5}\%$

Decimal      Improper fraction

c  $\frac{9}{800} = \frac{1.125}{100} = 1.125\% = \frac{9}{8}\%$

Decimal      Improper fraction

d  $\frac{9}{750} = \frac{1.2}{100} = 1.2\% = \frac{5}{4}\%$

Decimal      Improper fraction

# Percentage Calculations

## Page 6 questions

### Decimals and percentages

1 a  $15\% = 0.15$  b  $20\% = 0.20$  c  $4\% = 0.04$  d  $9\% = 0.09$   
 e  $125\% = 1.25$  f  $250\% = 2.50$  g  $110\% = 1.10$  h  $305\% = 3.05$

2 a  $0.03 = 3\%$  b  $0.16 = 16\%$  c  $1.12 = 112\%$  d  $2.45 = 245\%$   
 e  $0.125 = 12.5\%$  f  $0.253 = 25.3\%$  g  $0.018 = 1.8\%$  h  $0.2225 = 22.25\%$

3 a  $0.015 = 1.5\%$  Decimal  
 $= \frac{3}{2}\%$  Improper fraction  
 b  $0.185 = 18.5\%$  Decimal  
 $= 18\frac{1}{2}\%$  Mixed numeral  
 c  $0.012 = 1.2\%$  Decimal  
 $= \frac{6}{5}\%$  Improper fraction  
 d  $0.458 = 45.8\%$  Decimal  
 $= 45\frac{4}{5}\%$  Mixed numeral

4 a  $155\% = 1.55 = 1\frac{11}{20} = \frac{31}{20}$  Decimal Mixed numeral Improper fraction  
 b  $218\% = 2.18 = 2\frac{9}{50} = \frac{109}{50}$  Decimal Mixed numeral Improper fraction  
 c  $100.5\% = 1.005 = 1\frac{1}{200} = \frac{201}{200}$  Decimal Mixed numeral Improper fraction  
 d  $220.4\% = 2.204 = 2\frac{51}{250} = \frac{551}{250}$  Decimal Mixed numeral Improper fraction  
 e  $375.20\% = 3.752 = 3\frac{94}{125} = \frac{469}{125}$  Decimal Mixed numeral Improper fraction  
 f  $125.8\% = 1.258 = 1\frac{129}{500} = \frac{629}{500}$  Decimal Mixed numeral Improper fraction

# Percentage Calculations

## Page 7 questions

### Decimals and percentages

5 a Simplified fraction =  $\frac{1}{4}$

Decimal = 0.25

b Mixed numeral form =  $5\frac{1}{2}\%$

Improper fraction form =  $\frac{11}{2}\%$

Simplified fraction =  $\frac{11}{200}$

Decimal = 0.055

c Improper fraction form =  $\frac{19}{4}\%$

Decimal form = 4.75%

Simplified fraction =  $\frac{19}{400}$

Decimal = 0.0475

d Improper fraction form =  $\frac{17}{8}\%$

Decimal form = 2.125%

Simplified fraction =  $\frac{17}{800}$

Decimal = 0.02125

e Mixed numeral form =  $112\frac{1}{2}\%$

Improper fraction form =  $\frac{225}{2}\%$

Simplified mixed numeral =  $1\frac{1}{8}$

Decimal = 1.125

f Mixed numeral form =  $237\frac{1}{5}\%$

Improper fraction form =  $\frac{1186}{5}\%$

Simplified mixed numeral =  $2\frac{93}{250}$

Decimal = 2.372

g Mixed numeral form =  $17\frac{1}{4}\%$

Improper fraction form =  $\frac{69}{4}\%$

Simplified fraction =  $\frac{69}{400}$

Decimal = 0.1725

h Decimal form = 7.1875%

Improper fraction form =  $\frac{115}{16}\%$

Simplified fraction =  $\frac{23}{320}$

Decimal = 0.071875

i Mixed numeral form =  $2\frac{3}{8}\%$

Improper fraction form =  $\frac{19}{8}\%$

Simplified fraction =  $\frac{19}{800}$

Decimal = 0.02375

j Decimal form = 100.625%

Improper fraction form =  $\frac{805}{8}\%$

Simplified mixed numeral =  $1\frac{1}{160}$

Decimal = 1.00625

# Percentage Calculations

## Page 9 questions

### Recurring decimals and percentages

1 a  $0.\dot{1}\% = \frac{\boxed{1}}{\boxed{9}}\%$     b  $0.\dot{5}\% = \frac{\boxed{5}}{\boxed{9}}\%$     c  $0.0\dot{7}\% = \frac{\boxed{7}}{\boxed{90}}\%$     d  $0.0\dot{6}\% = \frac{\boxed{1}}{\boxed{15}}\%$

2 a  $0.1\dot{3}\% = \frac{\boxed{1}}{\boxed{10}} + \frac{\boxed{3}}{\boxed{90}}\% = \frac{\boxed{2}}{\boxed{15}}\%$     b  $0.3\dot{8}\% = \frac{\boxed{3}}{\boxed{10}} + \frac{\boxed{8}}{\boxed{90}}\% = \frac{\boxed{7}}{\boxed{18}}\%$

c  $0.08\dot{3} = \frac{\boxed{8}}{\boxed{100}} + \frac{\boxed{3}}{\boxed{900}}\% = \frac{\boxed{1}}{\boxed{12}}\%$     d  $0.05\dot{7}\% = \frac{\boxed{5}}{\boxed{100}} + \frac{\boxed{7}}{\boxed{900}}\% = \frac{\boxed{13}}{\boxed{225}}\%$

3 a  $23\frac{1}{3}\% = \frac{\boxed{23.\dot{3}}}{\text{Decimal form}}\% = \frac{\boxed{0.2\dot{3}}}{\text{Equivalent decimal}} = \frac{\boxed{7}}{\boxed{30}} \text{ Fraction}$

b  $14\frac{4}{9}\% = \frac{\boxed{14.\dot{4}}}{\text{Decimal form}}\% = \frac{\boxed{0.1\dot{4}}}{\text{Equivalent decimal}} = \frac{\boxed{13}}{\boxed{90}} \text{ Fraction}$

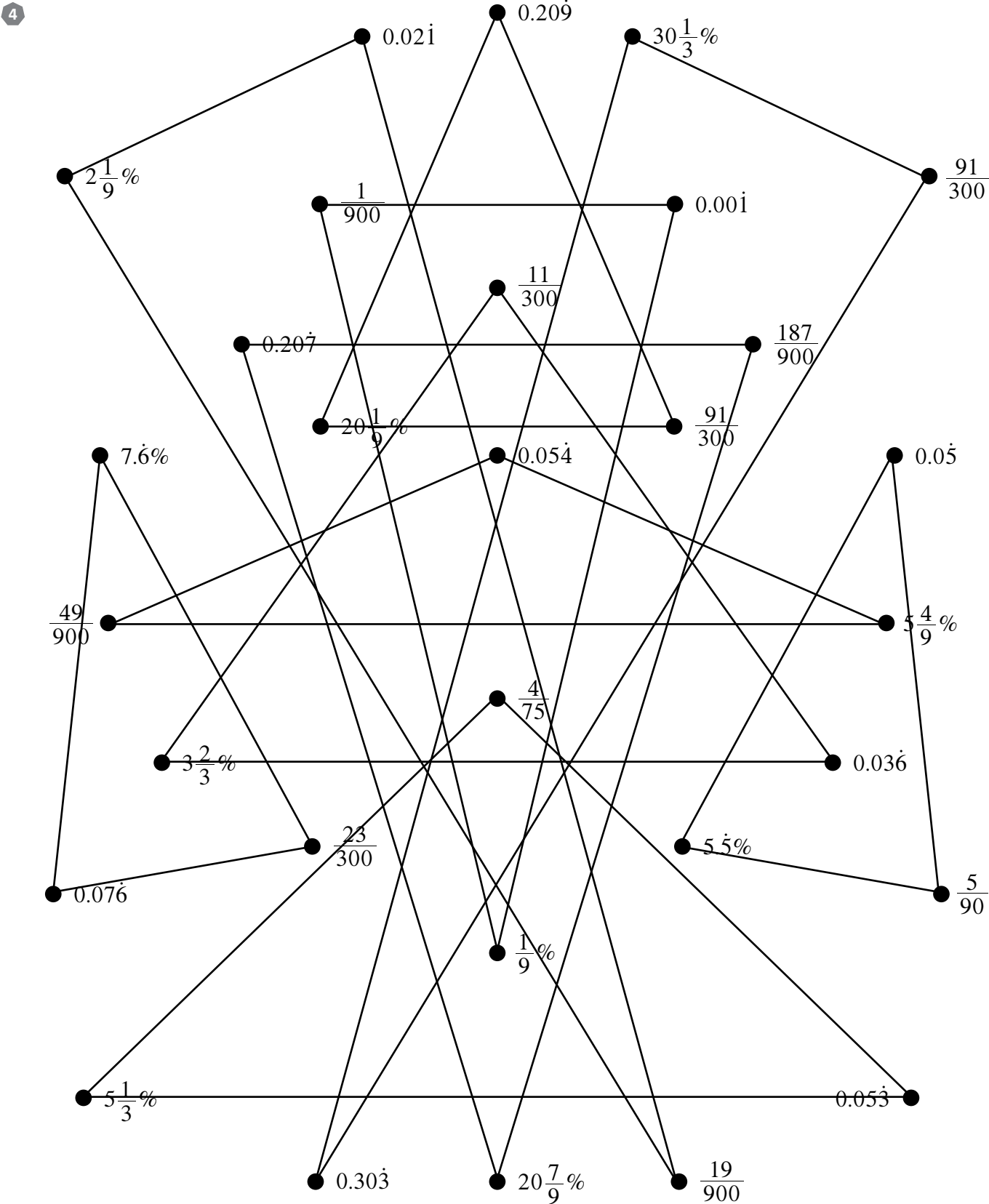
c  $5\frac{1}{9}\% = \frac{\boxed{5.\dot{1}}}{\text{Decimal form}}\% = \frac{\boxed{0.05\dot{1}}}{\text{Equivalent decimal}} = \frac{\boxed{23}}{\boxed{450}} \text{ Fraction}$

d  $9\frac{2}{3}\% = \frac{\boxed{9.\dot{6}}}{\text{Decimal form}}\% = \frac{\boxed{0.09\dot{6}}}{\text{Equivalent decimal}} = \frac{\boxed{29}}{\boxed{300}} \text{ Fraction}$

# Percentage Calculations

Page 10 questions

Recurring decimals and percentages





# Percentage Calculations

## Page 11 questions

### Recurring decimals and percentages

5 a  $\frac{8}{11} = \boxed{8} \div \boxed{11}$   
 $= \boxed{0.\dot{7}\dot{2}}$  Recurring decimal  
 $= \boxed{0.\dot{7}\dot{2}} \times \boxed{100} \%$   
 $= \boxed{72.7} \%$   
 Equivalent percentage to 1 d.p.

b  $\frac{19}{12} = \boxed{19} \div \boxed{12}$   
 $= \boxed{1.58\dot{3}}$  Recurring decimal  
 $= \boxed{1.58\dot{3}} \times \boxed{100} \%$   
 $= \boxed{158.3} \%$   
 Equivalent percentage to 1 d.p.

c  $\frac{5}{6} = \boxed{0.8\dot{3}}$   
 Recurring decimal  
 $= \boxed{83.3} \%$   
 Percentage to 1 d.p.

d  $\frac{2}{15} = \boxed{0.1\dot{3}}$   
 Recurring decimal  
 $= \boxed{13.3} \%$   
 Percentage to 1 d.p.

e  $\frac{5}{18} = \boxed{0.2\dot{7}}$   
 Recurring decimal  
 $= \boxed{27.8} \%$   
 Percentage to 1 d.p.

f  $\frac{9}{22} = \boxed{0.4\dot{0}\dot{9}}$   
 Recurring decimal  
 $= \boxed{40.9} \%$   
 Percentage to 1 d.p.

g  $\frac{7}{12} = \boxed{0.58\dot{3}}$   
 Recurring decimal  
 $= \boxed{58.3} \%$   
 Percentage to 1 d.p.

h  $\frac{13}{33} = \boxed{0.3\dot{9}}$   
 Recurring decimal  
 $= \boxed{39.4} \%$   
 Percentage to 1 d.p.

i  $\frac{12}{11} = \boxed{1.0\dot{9}}$   
 Recurring decimal  
 $= \boxed{109.1} \%$   
 Percentage to 1 d.p.

j  $\frac{17}{15} = \boxed{1.1\dot{3}}$   
 Recurring decimal  
 $= \boxed{113.3} \%$   
 Percentage to 1 d.p.

k  $\frac{16}{12} = \boxed{1.\dot{3}}$   
 Recurring decimal  
 $= \boxed{133.3} \%$   
 Percentage to 1 d.p.

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