

Mathletics

# Percentage Calculation Worksheets



Teacher Solutions

Grade 8

# Percentage Calculations

## Page 2 questions

### Fractions and percentages

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

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

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

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

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

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

# 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 number

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

Decimal      Mixed number

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

Decimal      Mixed number

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

Decimal      Mixed number

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

Decimal      Mixed number

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

Decimal      Mixed number

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

4 a  $155\% = 1.55 = 1\frac{11}{20} = \frac{31}{20}$     b  $218\% = 2.18 = 2\frac{9}{50} = \frac{109}{50}$   
 Decimal    Mixed number    Improper fraction    Decimal    Mixed number    Improper fraction

c  $100.5\% = 1.005 = 1\frac{1}{200} = \frac{201}{200}$     d  $220.4\% = 2.204 = 2\frac{51}{250} = \frac{551}{250}$   
 Decimal    Mixed number    Improper fraction    Decimal    Mixed number    Improper fraction

e  $375.20\% = 3.752 = 3\frac{94}{125} = \frac{469}{125}$     f  $125.8\% = 1.258 = 1\frac{129}{500} = \frac{629}{500}$   
 Decimal    Mixed number    Improper fraction    Decimal    Mixed number    Improper fraction

# Percentage Calculations

## Page 7 questions

### Decimals and percentages

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

Decimal = 0.25

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

Decimal form = 4.75%

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

Decimal = 0.0475

e Mixed number form =  $112\frac{1}{2}\%$   
Improper fraction form =  $\frac{225}{2}\%$

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

Decimal = 1.125

g Mixed number form =  $17\frac{1}{4}\%$   
Improper fraction form =  $\frac{69}{4}\%$

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

Decimal = 0.1725

i Mixed number form =  $2\frac{3}{8}\%$   
Improper fraction form =  $\frac{19}{8}\%$

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

Decimal = 0.02375

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

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

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

Decimal = 0.055

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

Decimal form = 2.125%

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

Decimal = 0.02125

f Mixed number form =  $237\frac{1}{5}\%$   
Improper fraction form =  $\frac{1186}{5}\%$

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

Decimal = 2.372

h Decimal form = 7.1875%  
Improper fraction form =  $\frac{115}{16}\%$

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

Decimal = 0.071875

j Decimal form = 100.625%  
Improper fraction form =  $\frac{805}{8}\%$

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

Decimal = 1.00625

# Percentage Calculations

## Page 9 questions

### Repeating decimals and percentages

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

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

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

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

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

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

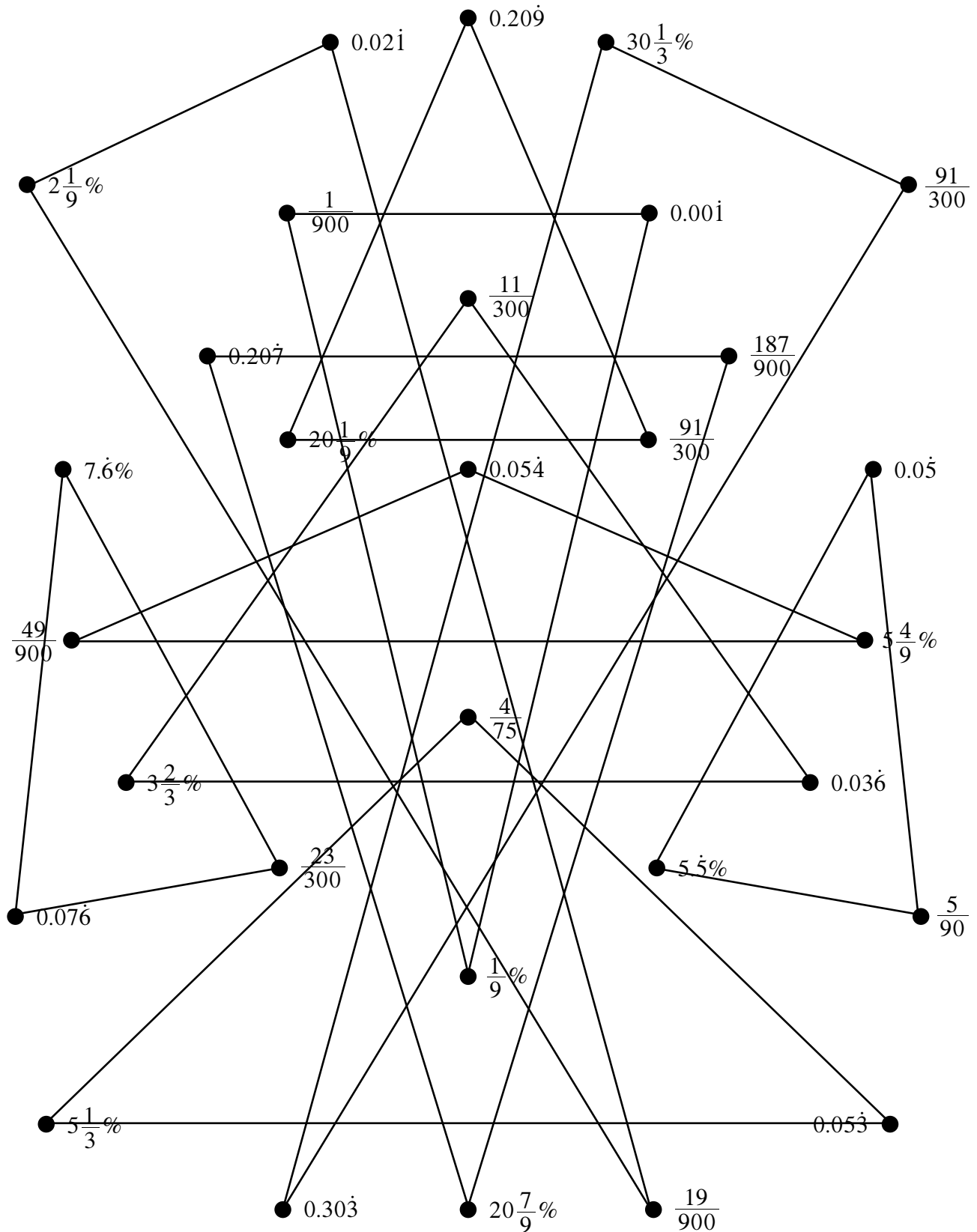
d  $9\frac{2}{3}\% = \frac{9.\dot{6}}{\text{Decimal form}} = \frac{0.09\dot{6}}{\text{Equivalent decimal}} = \frac{29}{300}$   
Fraction

## Percentage Calculations

## Page 10 questions

## Repeating decimals and percentages

4





# Percentage Calculations

## Page 11 questions

### Recurring decimals and percentages

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

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

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

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

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

f  $\frac{9}{22} = \boxed{0.40\dot{9}}$   
 Repeating decimal  
 $= \boxed{40.9} \%$   
 Percentage to 1 d.p.

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

h  $\frac{13}{33} = \boxed{0.\dot{3}\dot{7}}$   
 Repeating decimal  
 $= \boxed{39.4} \%$   
 Percentage to 1 d.p.

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

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

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



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