

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

Decimal Mixed numeral

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

Decimal Mixed numeral

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

Decimal Mixed numeral

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

Decimal Mixed numeral

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

Decimal Mixed numeral

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

Decimal Mixed numeral

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

Decimal Improper fraction

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

Decimal Improper fraction

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

Decimal Improper fraction

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

Decimal Improper fraction

Percentage Calculations

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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
 $= \frac{3}{200}\%$ Improper fraction
 b $0.185 = 18.5\%$ Decimal
 $= 18\frac{1}{2}\%$ Mixed numeral
 c $0.012 = 1.2\%$ Decimal
 $= \frac{6}{500}\%$ 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

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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

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

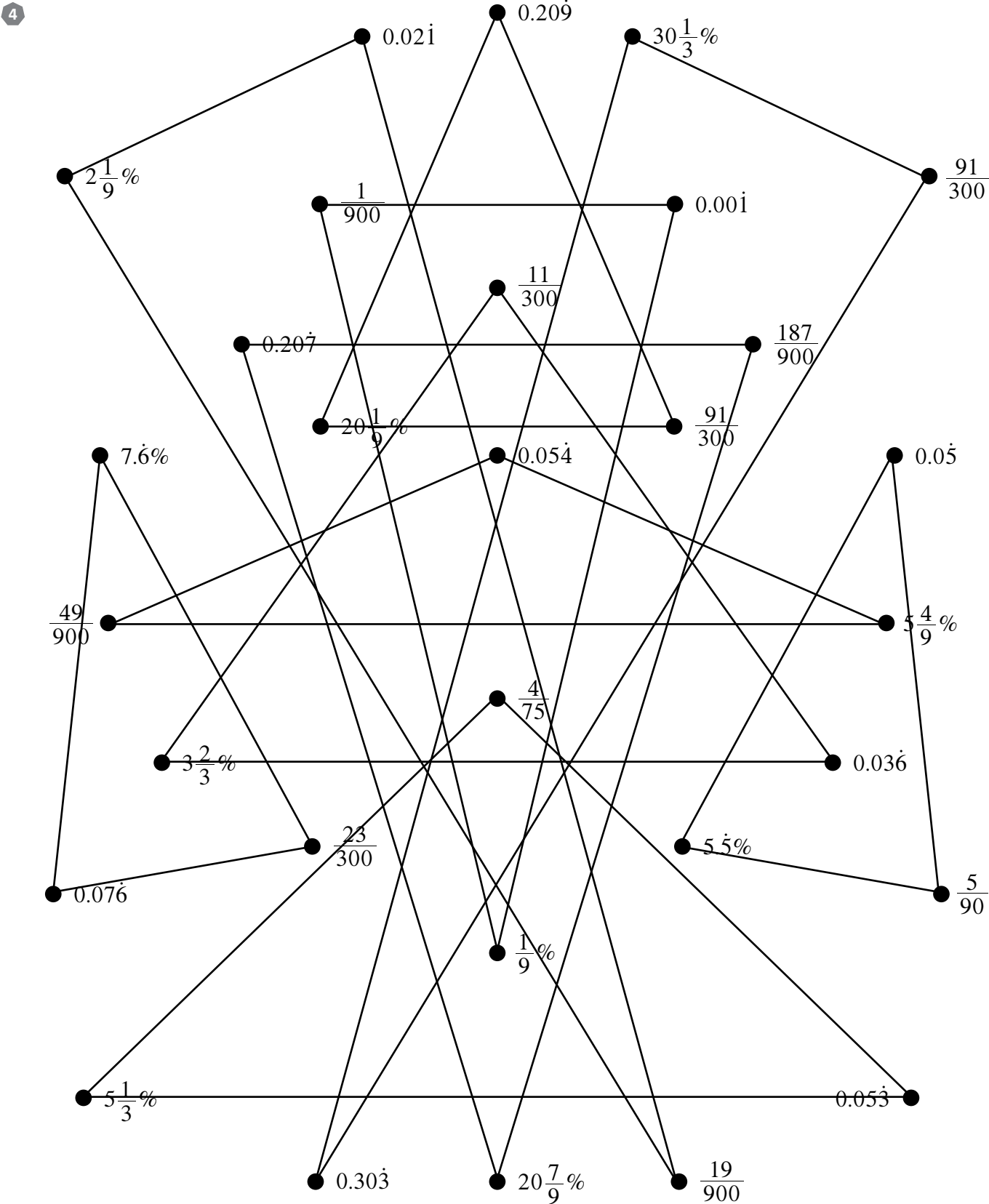
c $5\frac{1}{9}\% = \frac{\boxed{5.\dot{1}}}{\text{Decimal form}}\% = \frac{\boxed{0.05\dot{1}}}{\text{Equivalent decimal}} = \frac{\boxed{23}}{\boxed{450}} \text{ Fraction}$

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

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Recurring decimals and percentages



Percentage Calculations

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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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