

Fractions

1) Calculate

a) $\frac{2}{7} + \frac{3}{7}$ b) $\frac{2}{3} \times \frac{3}{5}$ c) $\frac{3}{4} \div \frac{7}{8}$ d) $\frac{5}{6} - \frac{3}{8}$

e) $4 \times \frac{2}{3}$ f) $3\frac{1}{2} - 2\frac{3}{5}$ g) $2\frac{1}{2} \times \frac{7}{10}$ h) $3 \div 1\frac{5}{6}$

i) $\frac{5}{6}$ of 72 j) $\frac{2}{7}$ of 10

- 2) On Monday I ran $2\frac{1}{3}$ km, on Tuesday I ran $1\frac{7}{9}$ km. Find the total amount that I ran. How much further do I need to run to do a total of $6\frac{1}{2}$ km?
- 3) A glass has a volume of $\frac{5}{9}$ litre. I have $13\frac{1}{3}$ litres of orange juice. How many glasses can I fill?
- 4) Each puppy has a mass of $3\frac{1}{6}$ kg. What is the mass of 8 puppies?
- 5) A sack of potatoes weighs $6\frac{2}{3}$ kg, $\frac{3}{8}$ of these are lost when you peel them. What mass of potato is this?
- 6) Convert between fraction/decimal/percentages

	Fraction	Decimal	Percentage
a	$\frac{7}{25}$		
b		0.65	
c			12%
d		0.04	
e	$\frac{3}{8}$		
f		0.002	
g			2.5%

h	$\frac{5}{6}$		
i	$\frac{9}{20}$		
j		1.4	
k			200%

Ratio/Proportion/Maps Review

- 1) Simplify the following ratios into their simplest form:
 - a) 12 : 20 b) 9 : 12 : 18 c) 0.8 : 0.12
 - d) 90cm : 2m e) 9 l : 450ml f) 1.2 hours : 50 mins

- 2) An “easy” way to convert Euros to Pounds is to remember that £3 ≈ 4€
Convert the following into the other currency
 - a) £15 b) 56€ c) 11€ d) £7

- 3) Divide the following amounts into the ratios given:
 - a) £120 into 2:3 b) 66kg into 7:5 c) 56 miles into 1:2:5

- 4) For optimum use of resources farmers must divide up their area of field between grazing, crops and fallow in the ratio 5:4:2.
 - a) If a farmer has 88 acres of land, how many acres should be given to each?
 - b) A farmer needs to grow 20 acres of crops, how many acres of grazing and fallow land should be allocated?

- 5) It takes 3 months for 20 workers to build a house.
 - a) How many workers should I use to complete it in 2 months?
 - b) How long would it take if I only used 6 workers?

- 6) Using a map scale of 1 : 10000
 - a) How long is the route around a lake that is 1.3cm on the map?
 - b) How wide would a forest be on the map that is 8km wide in real life?

- 7) Using a map scale of 1 : 400000
- a) What is the distance in real life of a road that is 12cm on the map?
 - b) A mansion is 500m long in real life, how long is it on the map?
- 8) In a school the ratio of boys to girls is 4:5.
The ratio of teachers to girls is 3:50.
The school has been asked to have at least one teacher for every 12 boys, have they managed it?

Percentages

- 1) Find
- a) 12% of 80 b) 56% of 140 c) 82% of 95
 - d) 41% of 15 e) 26% of 48
- 2) Increase 60 by 30% 3) Decrease 720 by 12%
- 4) Brian scored 18 out of 20 in a test. Find his percentage score.
- 5) My height increases from 120cm to 144 cm. Find the percentage increase
- 6) My mass decreases from 112kg to 98kg, find the percentage decrease
- 7) I increased my wages by 15% and now earn 25300, find my original wages
- 8) The amount of milk in a glass decreased by 20%, there is now 420ml, how much was there originally?
- 9) I bought a painting for £1200 and then sold it for £1300. Find my percentage profit to 3sf.
- 10) My hourly rate goes down by 5% and is now £61.75. How much was it before?
- 11) The price of a car including VAT of 20% is £15600. How much is it without VAT?

Fractions

- 1a) $\frac{5}{7}$ b) $\frac{2}{5}$ c) $\frac{6}{7}$ d) $\frac{11}{24}$ e) $2\frac{2}{3}$ f) $\frac{9}{10}$ g) $1\frac{3}{4}$ h) $1\frac{7}{11}$ i) 60 j) $2\frac{6}{7}$ 2) $4\frac{1}{9}$ km, $2\frac{7}{18}$ km left
3) 24 4) $25\frac{1}{3}$ kg 5a) 0.28, 28% b) $\frac{13}{20}$, 65% c) $\frac{3}{25}$, 0.12 d) $\frac{1}{25}$, 4%
e) 0.375, 37.5% f) $\frac{1}{500}$, 0.2% g) $\frac{1}{40}$, 0.025 h) $0.8\dot{3}$, $83.\dot{3}\%$ i) 0.45, 45%
j) $1\frac{2}{5}$, 140% k) 2 for both

Ratio and Proportion

- 1a) 3:5 b) 3:4:6 c) 20:3 d) 9:20 e) 20:1 f) 36:25 2a) 20€ b) £42 c) £8.25
d) 9.33€ 3a) £48,£72 b) 38.5kg, 27.5kg c) 7mil, 14mil, 35mil 4) 40grazing,
32crop, 16fallow b) 25grazing, 10fallow 5a) 30 b) 10 months 6a) 130m
b) 80cm 7a) 48km b) 0.125cm 8) No 13.3 instead.

Percentages

- 1a) 9.6 b) 78.4 c) 77.9 d) 6.15 e) 12.48 2) 78 3) 806.4 4) 90% 5) 20%
6) 12.5% 7) £22000 8) 525ml 9) 8.33% 10) £65 11) £13000