Armadale Academy

N5 Apps of Maths Revision Booklet

October Assessment

How to use this booklet:

There are questions on each topic that has been covered so far in the S1 mathematics course.

Next to each set of questions is a QR code which you can scan with your phone.

These QR codes will take you videos with explanations of how to answer the questions if you are unsure.

1. Rounding to Significant Figures

Video: Answers:

Question 1: Round each of the following numbers to 1 significant figure

(a) 36 (b) 22 (c) 83 (d) 68 (e) 97 (f) 120 (g) 519

(h) 260 (i) 741 (j) 888 (k) 408 (l) 650 (m) 148 (n) 972

(o) 3900 (p) 5400 (q) 4125 (r) 2732 (s) 6349 (t) 8099 (u) 6499

Question 2: Round each of the following numbers to 1 significant figure

(a) 12000 (b) 46000 (c) 74500 (d) 83771 (e) 95120 (f) 330000

(g) 863000 (h) 248220 (i) 489331 (j) 13800000

Question 3: Round each of the following numbers to 1 significant figure

(a) 2.9 (b) 3.2 (c) 5.7 (d) 46.81 (e) 57.25 (f) 80.96 (g) 94.9

(h) 115.1 (i) 8.482 (j) 13.65 (k) 66.321 (l) 5501.4 (m) 48.02 (n) 99.99

Question 4: Round each of the following numbers to 1 significant figure

(a) 0.54 (b) 0.86 (c) 0.161 (d) 0.048 (e) 0.0943 (f) 0.0071 (g) 0.0038

(h) 0.06482 (i) 0.8835 (j) 0.00064 (k) 0.00098 (l) 0.00002789

Question 5: Round each of the following numbers to 2 significant figures

(a) 844 (b) 665 (c) 129 (d) 2840 (e) 9250 (f) 1359 (g) 298

(h) 504 (i) 999 (j) 3841 (k) 48500 (l) 13.7 (m) 58.3 (n) 49.6

(o) 1.41 (p) 42.64 (q) 0.3189 (r) 22490 (s) 186110 (t) 0.04912 (u) 4.98

(v) 997826 (w) 2.99517 (x) 0.06014

Question 6: Round each of the following numbers to 3 significant figures

(a) 9433 (b) 1891 (c) 2496 (d) 3.226 (e) 37756 (f) 57147 (g) 7.0078

(h) 51.564 (i) 0.90341 (j) 2.7892 (k) 0.08906 (l) 0.007812 (m) 9909.1 (n) 0.6006

Apply

Question 1: In an election 43.8% of people voted for a candidate.
Round this figure to one significant figure

Question 2: 32641 people watch a rugby match between Italy and Argentina.
Round this number to 2 significant figures.

Question 3: Round the following numbers to 1 significant figure

(a) eight million, six hundred thousand   (b) the product of 19 and 351

2. Fractions, Decimals and Percentages

Video:

Question 2: Work out the following additions

(a) $\dfrac{1}{5} + \dfrac{1}{5}$ (b) $\dfrac{3}{11} + \dfrac{2}{11}$ (c) $\dfrac{1}{9} + \dfrac{7}{9}$ (d) $\dfrac{3}{7} + \dfrac{3}{7}$

(e) $\dfrac{6}{11} + \dfrac{2}{11}$ (f) $\dfrac{7}{13} + \dfrac{4}{13}$ (g) $\dfrac{3}{5} + \dfrac{1}{5}$ (h) $\dfrac{10}{21} + \dfrac{10}{21}$

Question 3: Work out the following subtractions

(a) $\dfrac{3}{5} - \dfrac{1}{5}$ (b) $\dfrac{6}{7} - \dfrac{2}{7}$ (c) $\dfrac{4}{5} - \dfrac{3}{5}$ (d) $\dfrac{7}{13} - \dfrac{1}{13}$

(e) $\dfrac{9}{11} - \dfrac{6}{11}$ (f) $\dfrac{16}{21} - \dfrac{8}{21}$ (g) $\dfrac{5}{6} - \dfrac{5}{6}$ (h) $\dfrac{16}{25} - \dfrac{9}{25}$

Video:

Question 1: Work out the following additions and subtractions.
Give your answers as simplified fractions.

(a) $\dfrac{2}{5} + \dfrac{1}{2}$ (b) $\dfrac{2}{7} + \dfrac{1}{2}$ (c) $\dfrac{1}{3} + \dfrac{1}{2}$ (d) $\dfrac{4}{5} - \dfrac{2}{3}$

(e) $\dfrac{8}{9} - \dfrac{1}{3}$ (f) $\dfrac{2}{3} + \dfrac{1}{6}$ (g) $\dfrac{3}{10} + \dfrac{2}{5}$ (h) $\dfrac{3}{8} + \dfrac{1}{4}$

(i) $\dfrac{7}{15} - \dfrac{1}{5}$ (j) $\dfrac{3}{4} - \dfrac{2}{5}$ (k) $\dfrac{3}{10} + \dfrac{3}{8}$ (l) $\dfrac{2}{5} + \dfrac{4}{7}$

(m) $\dfrac{11}{15} - \dfrac{1}{6}$ (n) $\dfrac{5}{11} + \dfrac{1}{4}$ (o) $\dfrac{3}{14} + \dfrac{1}{3}$ (p) $\dfrac{11}{13} - \dfrac{1}{2}$

(q) $\dfrac{7}{20} + \dfrac{2}{5}$ (r) $\dfrac{8}{9} - \dfrac{3}{5}$ (s) $\dfrac{11}{18} + \dfrac{1}{6}$ (t) $\dfrac{39}{100} - \dfrac{7}{20}$

(u) $\dfrac{4}{15} + \dfrac{5}{12}$ (v) $\dfrac{2}{3} - \dfrac{9}{16}$ (w) $\dfrac{19}{30} + \dfrac{1}{8}$ (x) $\dfrac{7}{12} + \dfrac{3}{14}$

Video:

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%

Video:

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%

Video:

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

Video:

Question 7: Arrange the following in order, from smallest to largest.

(a) $\frac{1}{4}$ 0.19 0.3 26% $\frac{1}{5}$

(b) 0.9 $\frac{17}{20}$ $\frac{4}{5}$ 88% 0.79

(c) 11% 0.2 13% $\frac{3}{20}$ $\frac{1}{8}$

(d) $\frac{2}{3}$ 65% 0.68 $\frac{7}{10}$ $\frac{5}{8}$

(e) 101% $\frac{11}{10}$ 1.2 $\frac{19}{20}$ 0.9

(f) 1.5 $\frac{5}{3}$ 82% $\frac{7}{4}$ $\frac{37}{40}$

Video: (non-calculator)

Question 1: Work out the following

(a) 10% of 70m   (b) 25% of 16 seconds   (c) 10% of 400kg   (d) 50% of 26g

(e) 75% of 40ml   (f) 1% of £300   (g) 25% of 36 days   (h) 50% of 9 days

(i) 75% of 24p   (j) 25% of £18   (k) 1% of $6300   (l) 10% of £7

(m) 1% of 60m   (n) 75% of 8 miles   (o) 1% of 80kg   (p) 50% of 1.6km

Video (Calculator)

Question 1: Calculate the following

(a) 15% of 80ml   (b) 9% of 205kg   (c) 45% of £135   (d) 17% of 540km

(e) 53% of 700g   (f) 14% of 12 hours   (g) 31% of 280kg   (h) 6% of 4GB

(i) 85% of 1250ml   (j) 66% of 9.4 miles   (k) 97% of $54   (l) 13% of 0.5 tonnes

Question 1: Paul leaves £4000 in the bank for two years.
It earns compound interest of 5% per year.
Calculate the total amount Paul has in the bank at the end of the two years.

Question 2: The population of birds on an island is estimated to increase by 10% every year.
The population of birds on the island is 20000.
Calculate an estimate for the population of birds in three years time.

Question 3: The value of a car decreases by 5% each year.
Sophie bought a car two years ago for £10000
Work out the value now.

Question 4: Sam invests £1800 in the bank for four years.
It earns compound interest of 4% each year.
Calculate the total amount Sam has in the bank at the end of four years.

Question 5: A full water tank holds 500 litres.
The tank begins to leak water and is losing 14% of its contents every hour.
Find how much water is left in the tank after 8 hours.

Question 6: The height of a tree increases by 60% each year.
When planted the tree was 40cm tall.
How tall will the tree be in 5 years time.

3. Speed, Distance, Time

Question 1: Olivia does her Maths, French and History homework
It takes her a total of three hours.

She spends 70 minutes on her History homework.
Olivia spends 15 minutes less on her Maths homework than her History homework.

How many minutes does Olivia spend doing her French homework?

Question 2: A train leaves Cardiff at 10:45am.
It takes 39 minutes to reach Bristol.

What time did the train reach Bristol?

Question 3: Rosie finished a puzzle in 16 minutes 22 seconds.
Heather finished 5 minutes 40 seconds after Rosie.
Tilly finished 12 minutes 15 seconds before Heather.

How long did Tilly take to complete the puzzle?

Question 4: Connor's watch is 19 minutes fast.
Joseph's watch is 8 minutes slow.
The time on Connor's watch is 17:02

What time is shown on Joseph's watch?

Question 5: A bus leaves Antrim every 21 minutes
A train leaves Antrim every 30 minutes
At 6am, a bus and a train leave Antrim at the same time.

What is the next time that a bus and a train leave at the same time?

Question 6: The flight from Perth to London is 16 hours and 35 minutes.
The time is Perth is 7 hours ahead of London.
A flight leaves Perth at 8am on Wednesday.
What is the time in London when the flight arrives?

Question 1: Convert the times from hours/minutes into hours, without a calculator.
e.g. 1   45 minutes = 0.75 hours
e.g. 2   1 hour 30 minutes = 1.5 hours

(a) 15 minutes
(b) 30 minutes
(c) 45 minutes
(d) 20 minutes
(e) 40 minutes
(f) 2 hours 30 minutes
(g) 1 hour 15 minutes
(h) 3 hours 45 minutes
(i) 2 hours 40 minutes
(j) 5 hours 30 minutes
(k) 7 hours 20 minutes
(l) 4 hours 15 minutes

Question 2: Convert the times from hours/minutes into hours.
You may use a calculator if needed.

(a) 18 minutes
(b) 54 minutes
(c) 1 hour 3 minutes
(d) 1 hour 36 minutes
(e) 2 hours 48 minutes
(f) 2 hours 33 minutes
(g) 8 hours 51 minutes
(h) 3 hours 21 minutes
(i) 27 minutes

Question 3: Convert the times from hours/minutes into hours.
Give each answer to 3 decimal places.

(a) 44 minutes
(b) 8 minutes
(c) 1 hour 50 minutes
(d) 2 hours 10 minutes
(e) 4 hours 26 minutes
(f) 3 hours 29 minutes
(g) 5 hours 2 minutes
(h) 2 hours 55 minutes
(i) 59 minutes

Question 4: Convert the times from hours into hours/minutes, without a calculator.

(a) 0.75 hours
(b) 1.25 hours
(c) 5.5 hours
(d) 1.3333... hours
(e) 2.6666... hours
(f) 10.75 hours
(g) 3.25 hours
(h) 0.5 hours
(i) 22.3333... hours

Question 1: Calculate the average speeds for each of the following, without using a calculator.

(a) A car travels 60 miles in 2 hours
(b) A lorry travels 120 miles in 3 hours
(c) A cyclist travels 45 miles in 5 hours
(d) A jogger travels 30km in 4 hours
(e) A runner runs 100 metres in 10 seconds
(f) A car travels 195 miles in 3 hours
(g) A helicopter travels 425 miles in 5 hours
(h) A helicopter flies 840 miles in 7 hours
(i) A dog runs 216 metres in 12 seconds
(j) An airplane travels 984 miles in 6 hours
(k) A bird flies 19 miles in 2 hours
(l) A car travels 600km in 8 hours

Question 2: Calculate the average speeds for each of the following, without using a calculator.

(a) A car travels 20 miles in 30 minutes
(b) A lorry travels 32 miles in 30 minutes
(c) A bird flies 17 kilometres in 30 minutes
(d) A man jogs 2 kilometres in 15 minutes.
(e) A helicopter flies 18 miles in 15 minutes
(f) An F1 car travels 32 miles in 15 minutes.
(g) A dog runs 3 kilometres in 10 minutes
(h) A jet travels 23 miles in 6 minutes.
(i) A car travels 12 miles in 20 minutes
(j) A car travels 9 miles in 12 minutes
(k) A motorcycle travels 36 miles in 40 minutes
(l) A car travels 27 kilometres in 45 minutes.

Question 1: The distance-time graph shows class 8A's journey to the zoo.
They stopped for a picnic on the way to the zoo.

(a) What time did the bus leave school?

(b) What time did they stop for a picnic?

(c) How far had they travelled when they stopped for a picnic?

(d) How long did they stop for?

(e) What time did they arrive at the zoo?

(f) How far is the zoo from school?
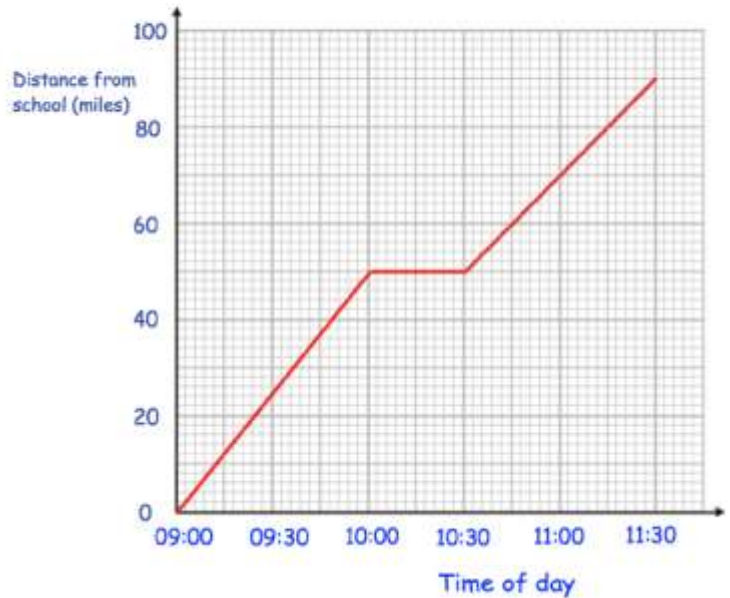
Question 2: Emma travelled to her Grandmother's house and back.
The distance-time graph shows information about her journey.

(a) What time did Emma begin her journey?

(b) How far was Emma from home at 8am?

(c) How long did Emma stay at her Grandmother's house?

(d) What time did Emma leave her Grandmother's house?

(e) How far was Emma from home at 11:45?

(f) How far did Emma travel in total?
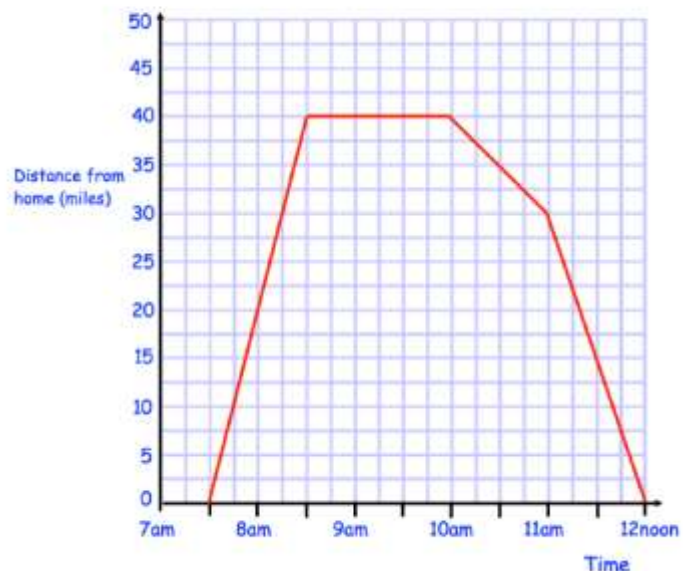
4. Perimeter

Question 1: Work out the perimeter of each shape below

(a)

5cm

3cm | 3cm

5cm

(b)

10cm

6cm

8cm

(c)

7cm

7cm | 7cm

7cm

(d)

4cm | 4cm

5cm | 5cm

6cm

(e)

2cm

4cm

7cm | 8cm

3cm

10cm

(f)

9cm | 9cm

14cm | 14cm
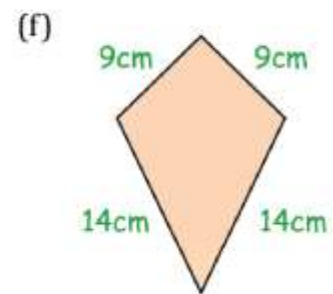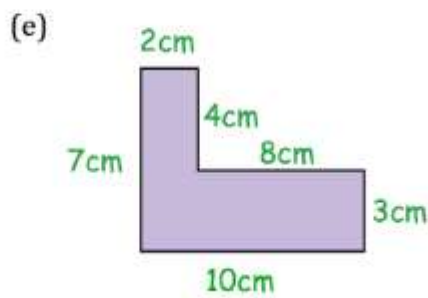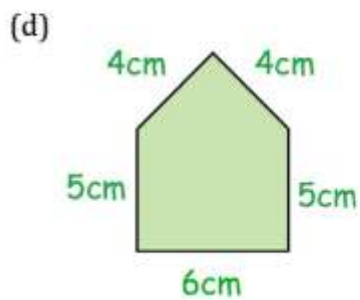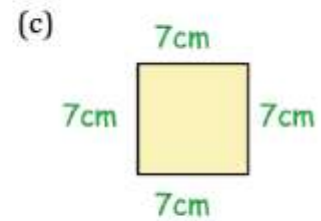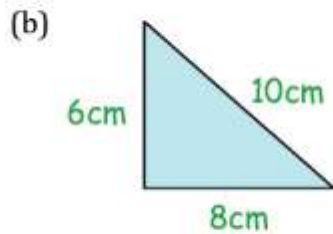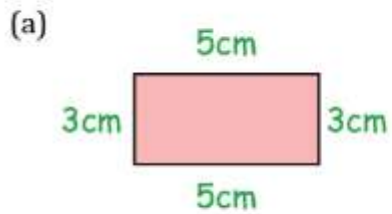
Question 7: Find the perimeter of each of these shapes
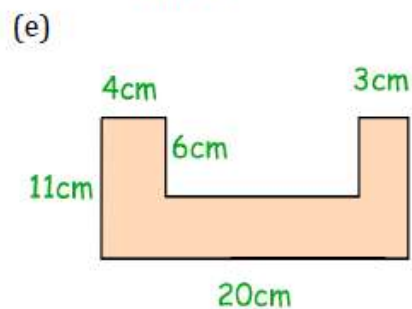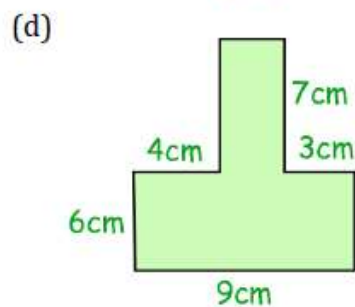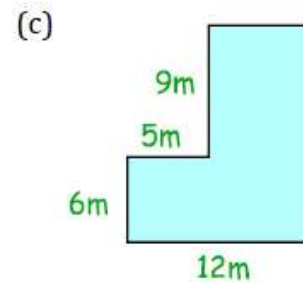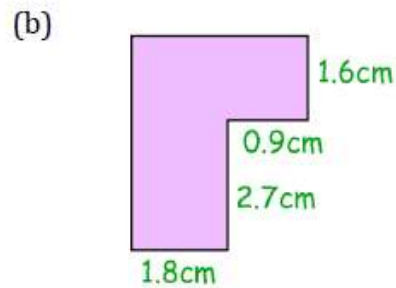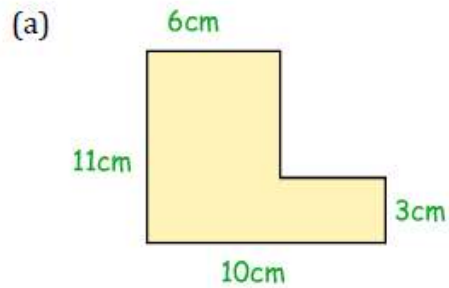
(a)

6cm

11cm

3cm

10cm

(b)

1.6cm

0.9cm

2.7cm

1.8cm

(c)

9m

5m

6m

12m

(d)

7cm

4cm | 3cm

6cm

9cm

(e)

4cm | 3cm

6cm

11cm

20cm

Question 1: Calculate the circumference of the following circles.
Give your answers to 1 decimal place.

(a) 10cm

(b) 7cm

(c) 3mm

(d) 6m

(e) 0.5m

(f) 9cm

(g) 25cm

(h) 1.3m

Question 2: Calculate the circumference of the following circles.
Give your answers to 1 decimal place.

(a) 4cm

(b) 32cm

(c) 8cm

(d) 5.5mm

(e) 50cm

(f) 7mm

(g) 71cm

(h) 0.8m
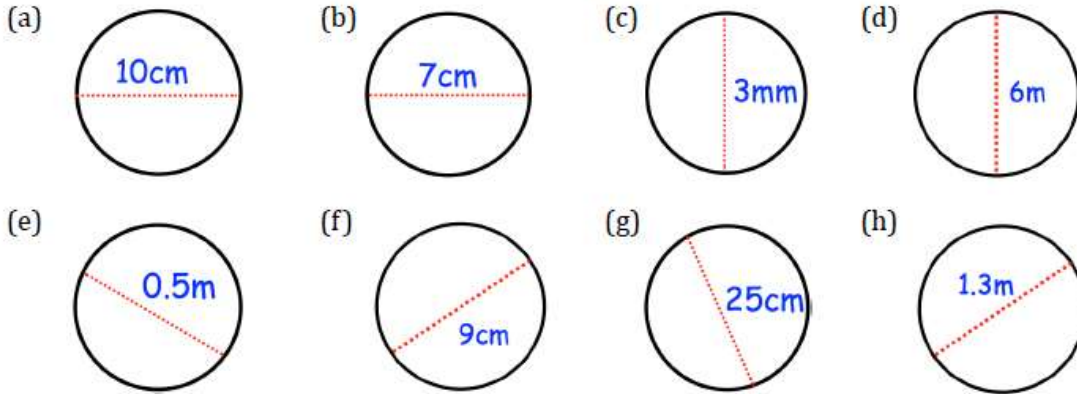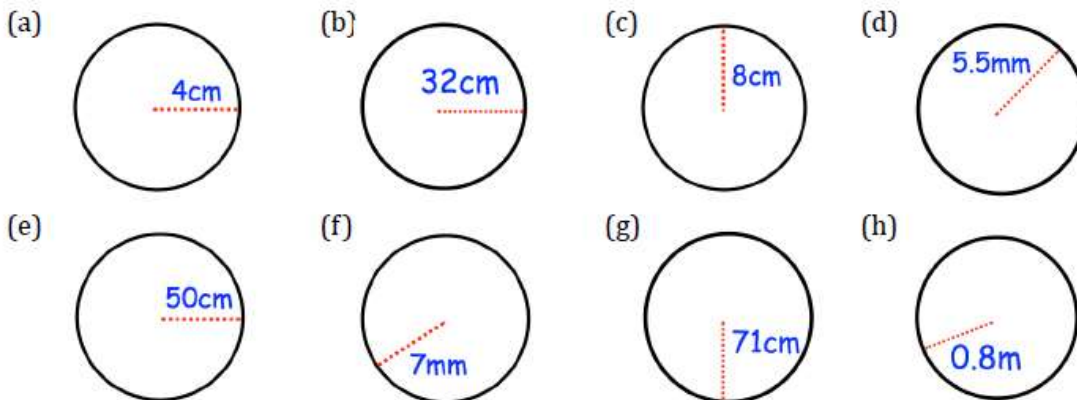
Question 1: Calculate the perimeter of each of these semi-circles.
Give your answers to 1 decimal place and include suitable units.

(a) 8cm

(b) 10m

(c) 7cm

(d) 15mm

(e) 19cm

(f) 3cm

5. Area

Question 1: Calculate the area of the following circles. Give your answers to 1 decimal place.

(a) 4cm

(b) 7cm

(c) 8cm

(d) 10m

(e) 1.5m

(f) 50cm

(g) 7mm

(h) 8.4cm

Question 2: Calculate the area of the following circles. Give your answers to 1 decimal place.

(a) 12cm

(b) 30cm

(c) 6m

(d) 11cm

(e) 9cm

(f) 32mm

(g) 0.8cm

(h) 1.3m
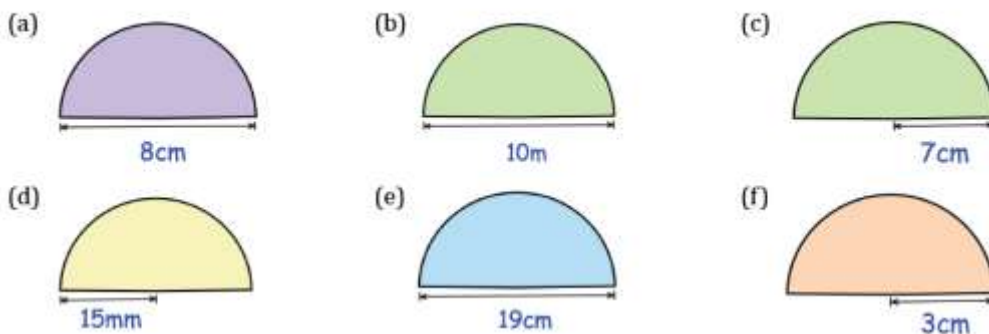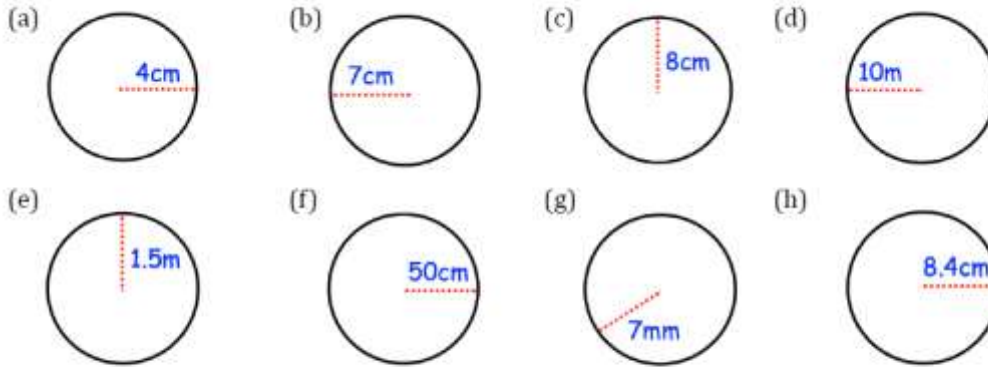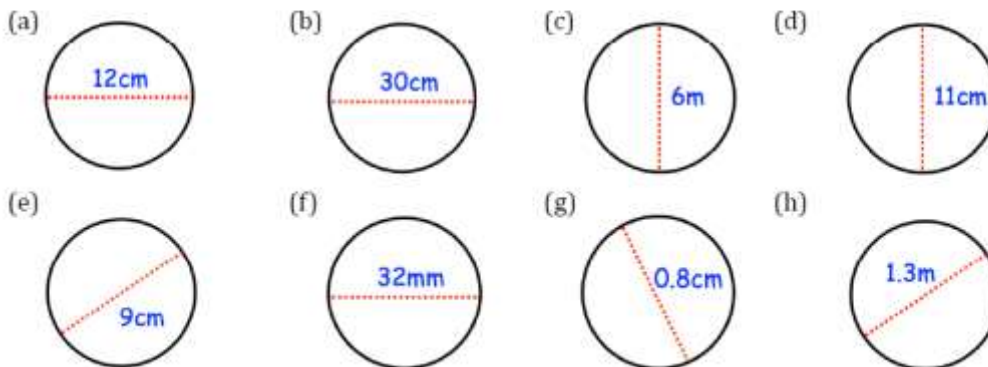
Question 1: Calculate the area of each of these semi-circles.
Give your answers to 1 decimal place and include suitable units.

(a) 7cm

(b) 3cm

(c) 8cm

(d) 15mm

(e) 10m

(f) 19cm
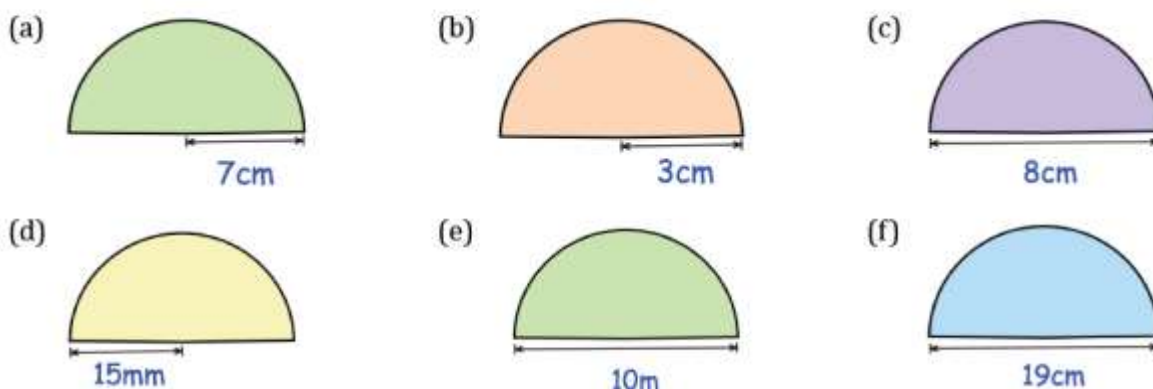
Question 1: Work out the area of each of these shapes.

(a)

9cm
8cm
5cm
7cm

(b)

25cm
12cm
10cm
6cm

(c)

4cm
10cm
3cm
13cm

(d)

2cm
5cm
4cm
3cm
9cm

(e)

24cm
8cm
20cm
6cm   6cm   2cm

(f)

8cm
7cm
3cm
2cm   3cm
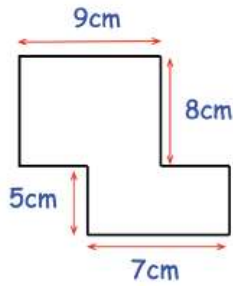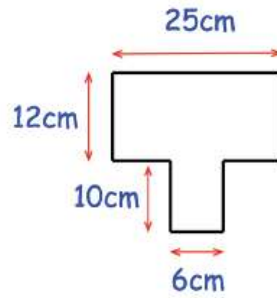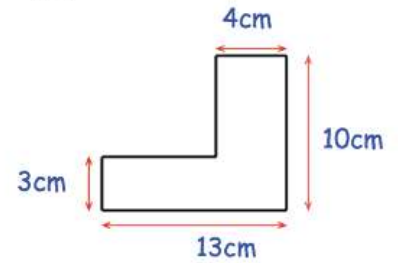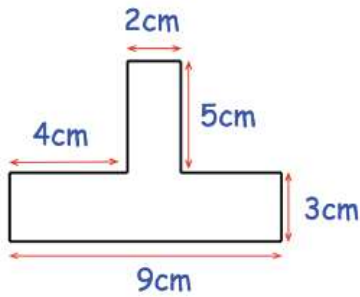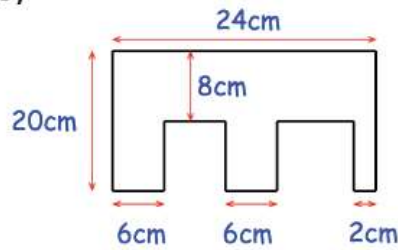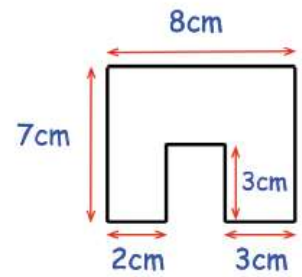
Question 1: Calculate the volume of each prism below

(a)

3cm
6cm
4cm

(b)

5cm
20cm
6cm

(c)

5m
7m
4m

(d)

2m
40cm
1.1m

(e)

8cm
5.5cm
7cm

(f)

6cm
12cm
9cm
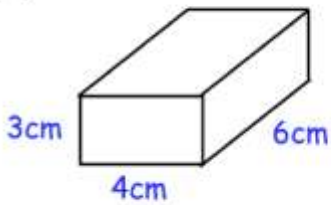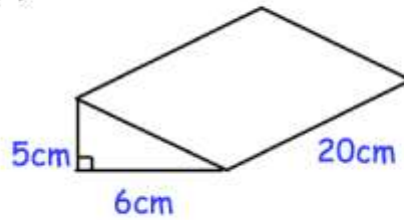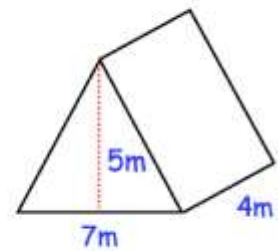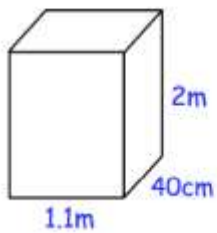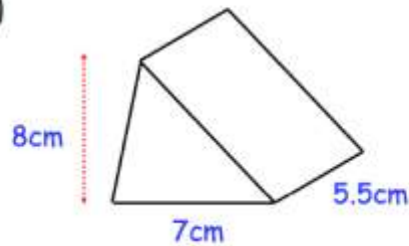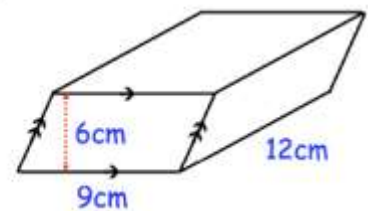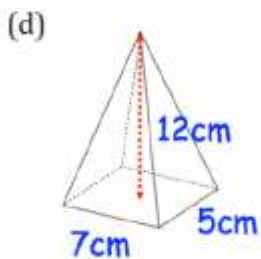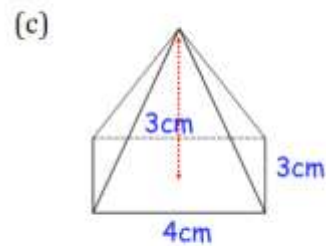
Question 1: Work out the volume of each cylinder.
Give each answer to one decimal place.

(a)
4cm
10cm

(b)
8cm
30cm

(c)
10cm
9cm

(d)
2.5mm
8mm

(e)
40cm
25cm

(f)
5cm
17cm
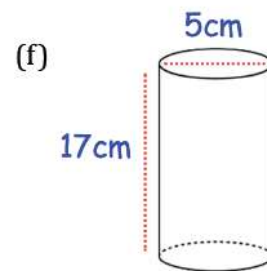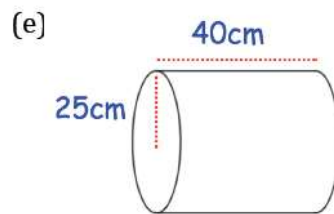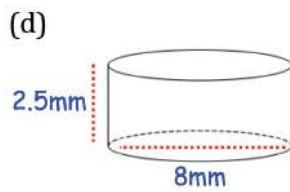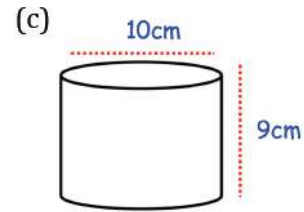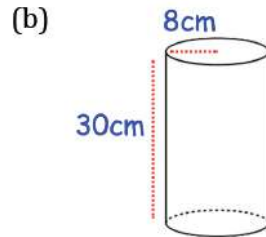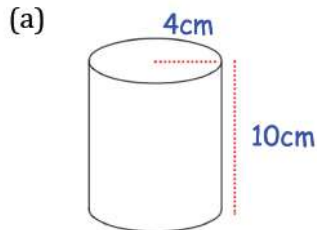
Question 1: Find the volume of each of these pyramids.
Give each answer to one decimal place (you may use a calculator)

(a)
7cm
6cm
9cm

(b)
8cm
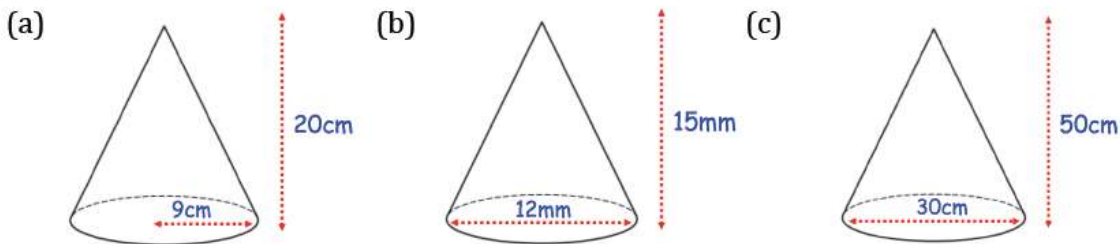6cm
6cm

(c)
3cm
3cm
4cm

(d)
12cm
5cm
7cm

(e)
20.6cm
15cm
10cm
10cm

(f)
90cm
1.5m
2m
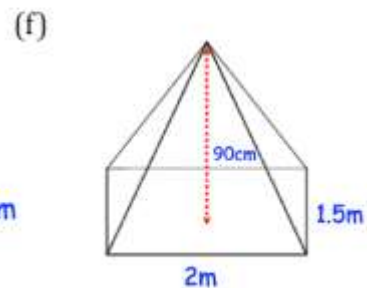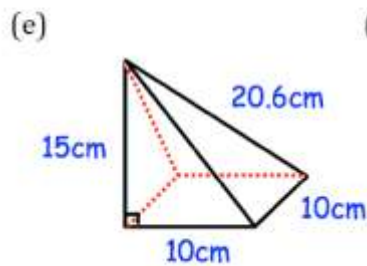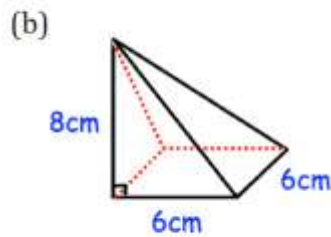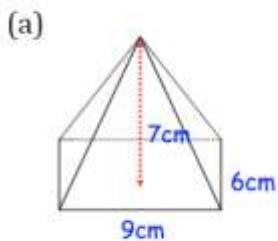
Question 1: Work out the volumes of each of following cones.
Give each answer to one decimal place.

(a)

20cm

7cm

(b)

5cm

1.5cm

(c)

9cm

8cm
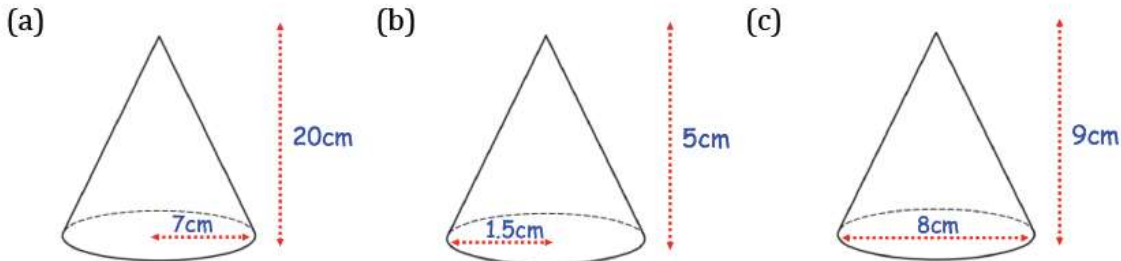
Question 2: Work out the volumes of each of the following cones.
Give each answer in terms of π

(a)

20cm

9cm

(b)

15mm

12mm

(c)

50cm

30cm

6. Tolerance

Video:

1. For each of the following write down the minimum and maximum sizes.
   (a) 15 ± 3cm
   (b) 22 ± 5kg
   (c) 100 ± 23cm
   (d) 150 ± 50mm
   (e) 120 ± 2.5cm
   (f) 1 ± 0.2mm

2. Write the following in tolerance form.
   (a) Max = 22cm, Min = 16cm
   (b) Max = 120kg, Min = 150kg
   (c) Max = 15cm, Min = 17cm
   (d) Min = 44mg, Max = 44.5mg
   (e) Max = 1.2cm, Min = 0.9cm
   (f) Min = 0.02mg, Max = 0.1mg

3. The following are the amount of liquid in bottles of soft drink that are allowed to be shipped out (ml).
   498   500   501   500   499   498   502   499   501   498
   Write down maximum and minimum allowed in tolerance form.