



S3 November Assessment Revision

Previous Revision

1. Find the following:

a. $\frac{3}{4} - \frac{1}{7}$

b. $1\frac{3}{7} - \frac{4}{5}$

c. $\frac{5}{9} \times \frac{4}{3}$

2. In a school of 845 pupils, there are 29 less girls than boys.

Let there be x girls.

a. Write down an equation which represents this.

b. Solve the equation to find the number of girls and the number of boys in the school.

3. Alice buys a t-shirt for £24.99 and sells it for £4.98.

Express her loss as a percentage of the original price.

4. The average annual temperature in Svalbard is expected to increase at a rate of 3.76% per year for the next 10 years.

If the average temperature in 2015 is 4°C , what is the expected average temperature in 2023?

Give your answer correct to 2 s.f.

5. In the Swatch end of season sale a line of watches are reduced by 18%.

If the sale price of a watch is £21.85, what was its price before the sale?

6. Find the gradient of the line joining

a. (2, 4) and (3, 8)

b. (-3, -7) and (-12, 5)

7. Find the equation of the line joining

a. (0, 3) and (4, 15)

b. (0, 6) and (-3, -2)

c. (-2, -9) and (0, -2)

d. (-5, 0) and (0, -14)



8. Calculate

a. $\frac{2}{5} - \frac{1}{4}$

b. $4\frac{1}{3} + \frac{3}{5}$

c. $7\frac{1}{2} \times 1\frac{2}{3}$

d. $4\frac{2}{5} \div 2\frac{1}{2}$

9. Three friends win £189,000 in their lottery syndicate.

If the money is split in the ratio 3 : 2 : 4, how much will each receive?

10. Find the gradient and y-intercept of the following straight lines:

a. $y = 6x + 5$

b. $3y - 5x = 1$

c. $x - 4y + 1 = 0$

11. A sector of a circle has a radius of 13.2m and an angle of 181° at its centre.

Calculate

a. The sector's area.

b. (i) The arc length

(ii) The perimeter of the sector.

12. Anna measures that the temperature of her flat falls at a steady rate of 4.75% per hour after 8pm.

If the temperature at 8pm measures 28.3°C , what will be the temperature at midnight?

Give your answer correct to 3 significant figures.

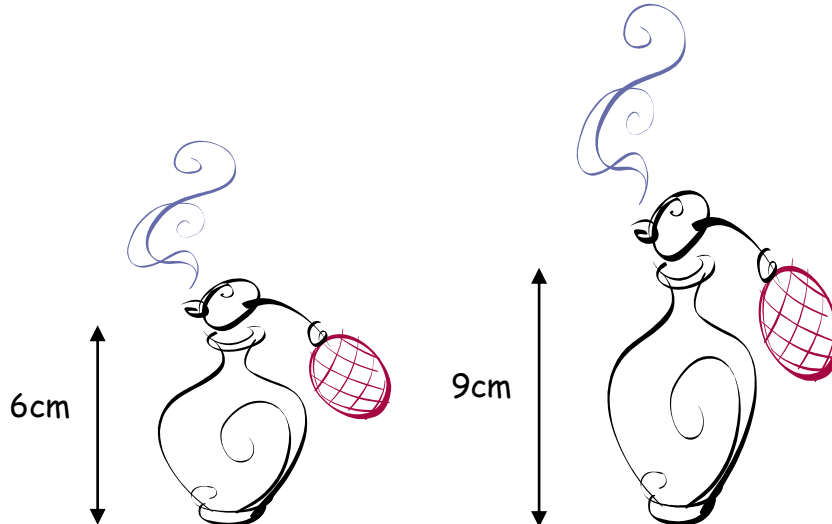
13. Seven chocolate bars cost £1.40. How much do 10 chocolate bars cost?

14. Five people lay a pipeline in 5 days. How long would one person take?



Similarity

1. Two perfume bottles are mathematically similar in shape.



The smaller bottle is 6cm high and holds 30ml of perfume.
The larger bottle is 9cm high.

What volume of perfume will the larger bottle hold?

2. Two butterfly hairclips are mathematically similar.

One clip has a length of 1.8cm, whilst the other has a length of 2.16cm.

The area of the larger clip is 5cm^2 . Calculate the area of the small hair clip.

Speed, Distance and Time

1. A sprinter train travels at an average speed of 144 km/hr. The train takes 1 hour 15 minutes to travel between Dingwall and Aberdeen.

Calculate the distance between Dingwall and Aberdeen (Non-calculator).

2. Sarah went for a cycle on Sunday morning. She cycled for 285 minutes in total, covering a total distance of 210km.

Calculate the average speed of her journey in kilometres per hour.



3. A camel can travel at a speed of 30km/hr over long distances.

At this speed, how far will a camel travel in 4 and a half hours?

4. A cyclist is travelling at an average speed of 30km/hr.

How long will it take for him to travel a distance of 45km?

5. A train is travelling a distance of 390km. The journey takes 3 hours and 45 minutes.

Calculate the average speed of the train.

6. A bus leaves Glasgow at 1155hrs and travels to York, 180 miles away.

If the average speed of the bus is 80m/hr, when will the bus arrive in York?

7. David drives from Dumfries to Manchester. A 28 mile part of this journey is affected by road works.

It takes him 40 minutes to drive this part of his journey. Calculate his average speed for this part of his journey.

Give your answer in miles per hour.

Equations 3

1. Solve the following equations:

a. $9(h - 2) - 3h = 2(h - 5) + 3$

b. $\frac{5(i - 2)}{3} = \frac{8(i + 3)}{7}$

2. Solve the following equations:

a. $\frac{3e - 5}{4} = \frac{e - 10}{3}$

b. $\frac{3h - 2h + 4}{2} = \frac{2h}{3}$

3. Solve the following:

a. $3e - 5 > 18$

b. $5(3p - 2) < 28$



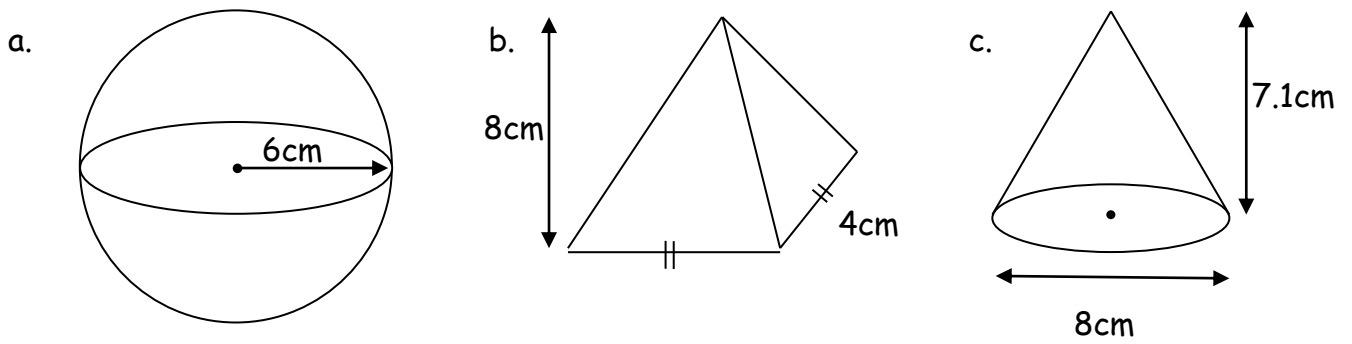
Volume

1. Find the volume of a cylinder with a radius of 12cm and a height of 19cm.

Give your answer correct to 2 significant figures.

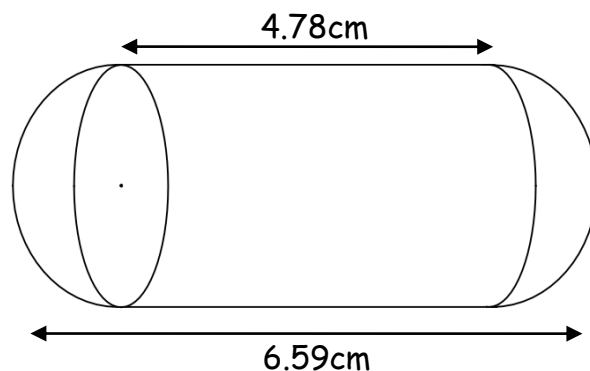
2. Find the radius of a cone which has a volume of 103.67mm^3 and a height of 11mm.

3. Find the volume of each shape below, giving your answer to the nearest ten.



4. Find the radius of a cone with a height of 4.7mm and a volume of 398.67mm^3 .

5. Calculate the volume of the shape shown below, which consists of a cylinder with a hemisphere on either end.



6. Calculate the volume of a hemisphere with a diameter of 6m.
Take $\pi = 3.14$.



7. A novelty giant pencil is in the shape of a cylinder with a cone on the end. Calculate the volume of the pencil.

