1. Work out 4.3 × 0.24

2. The height, H cm, of a table is measured as 84 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.054 \times 10^2 \qquad 5400 \times 10^{-4} \qquad 5400 \qquad 0.54 \times 10^{-1}$$

4. Simplify $\qquad 4a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $3(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 130$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 2 cheese sandwiches   and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad\qquad$ $x^2 + y^2 = 4$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $x + y = 1$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
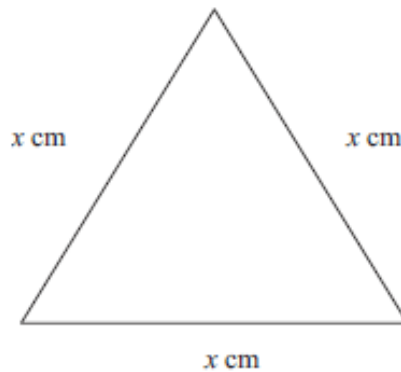
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 240$ correct to 3 significant figures. $f = 45.3$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 1.4 g/cm^3.
 240 g of liquid A and 150 g of liquid B are mixed to make liquid C.
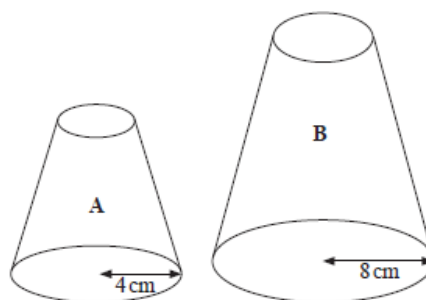Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
5 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

12. P is inversely proportional to the square of x. Given that $x = 5$ when $P = 4$, find the value of P when $x = 10$. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point $(-3, 6)$. The line **L** crosses the x-axis at the point P. Work out the coordinates of P.

14. Andy invests £13000 in a variable rate compound interest account. The interest is

2% for the first year, 3.5% for the second year and 2.3% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 10%. The sale price of a digital camera is £340. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

x cm x cm

x cm

The area of the equilateral triangle is 49 cm^2. Find the value of x.
Give your answer correct to 3 significant figures.

17.

B

A

4 cm   8 cm

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 90 cm^2.
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 700 cm^3.
(b) Work out the volume of shape **A**.

1. Work out 2.34 × 0.24

2. The height, H cm, of a table is measured as 92 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.043 \times 10^2 \qquad 4300 \times 10^{-4} \qquad 4300 \qquad 0.43 \times 10^{-1}$$

4. Simplify $\qquad 5a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $4(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 430$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 3 cheese sandwiches   and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad$ $x^2 + y^2 = 16$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $x + y = 1$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
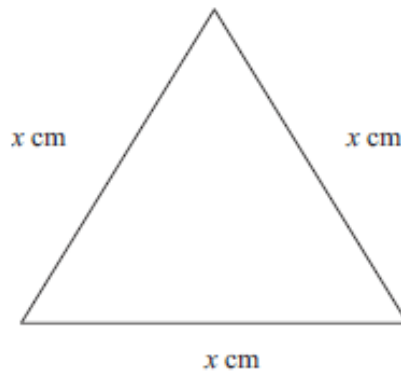
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 760$ correct to 3 significant figures. $f = 23.5$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 1.7 g/cm^3.
 430 g of liquid A and 150 g of liquid B are mixed to make liquid C.
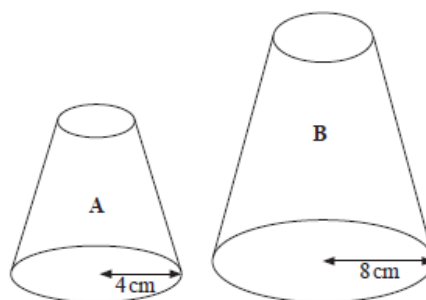Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
6 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 5 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £34000 in a variable rate compound interest account. The interest is

2.4% for the first year, 3.5% for the second year and 4.34% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 13%. The sale price of a digital camera is £540. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

The area of the equilateral triangle is 81 cm². Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 100 cm².
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 800 cm³.
(b) Work out the volume of shape **A**.

Leytonstone School Ver. (B)
Mr B Przystawski

1. Work out 4.6 × 0.24

2. The height, H cm, of a table is measured as 81 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.067 \times 10^2 \qquad 6700 \times 10^{-4} \qquad 6700 \qquad 0.67 \times 10^{-1}$$

4. Simplify $\qquad 3a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $5(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 365$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 4 cheese sandwiches and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad$ $x^2 + y^2 = 25$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad x + y = 1$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
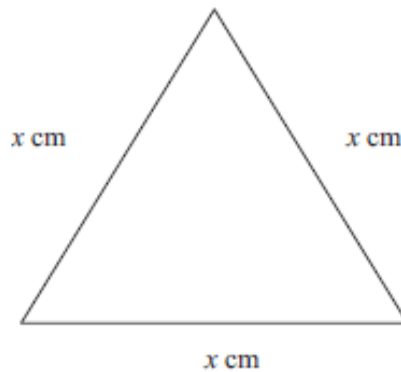
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 980$ correct to 3 significant figures. $f = 12.5$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 3.4 g/cm^3.
 420 g of liquid A and 150 g of liquid B are mixed to make liquid C.
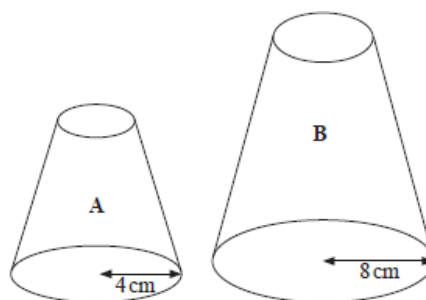Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
7 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

12. P is inversely proportional to the square of x. Given that $x = 5$ when $P = 7$, find the value of P when $x = 10$. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point $(-3, 6)$. The line **L** crosses the x-axis at the point P. Work out the coordinates of P.

14. Andy invests £32000 in a variable rate compound interest account. The interest is

2.5% for the first year, 3.5% for the second year and 4.32% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 16%. The sale price of a digital camera is £650. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

The area of the equilateral triangle is 121 cm^2. Find the value of x.
Give your answer correct to 3 significant figures.

17.

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 120 cm^2.
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 900 cm^3.
(b) Work out the volume of shape **A**.

1. Work out 7.3 × 0.24

2. The height, H cm, of a table is measured as 28 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.054 \times 10^2 \qquad 5400 \times 10^{-4} \qquad 5400 \qquad 0.54 \times 10^{-1}$$

4. Simplify $\qquad 4a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $6(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 650$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 5 cheese sandwiches   and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad$ $x^2 + y^2 = 49$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad x + y = 1$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
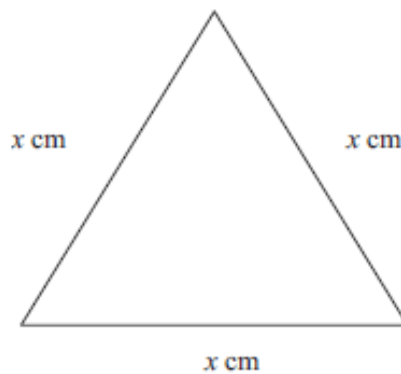
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 450$ correct to 3 significant figures. $f = 63.4$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 3.2 g/cm^3.
 120 g of liquid A and 150 g of liquid B are mixed to make liquid C.
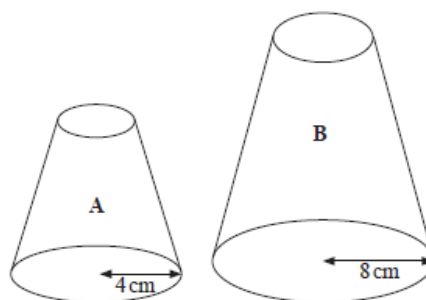Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
8 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

Leytonstone School Ver. (D)
Mr B Przystawski

12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 8 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £45000 in a variable rate compound interest account. The interest is

3.5% for the first year, 3.5% for the second year and 3.45% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 17%. The sale price of a digital camera is £634. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

x cm   *x* cm

x cm

The area of the equilateral triangle is 144 cm². Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

A

B

4 cm   8 cm

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 130 cm².
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 950 cm³.
(b) Work out the volume of shape **A**.

1. Work out 2.4 × 0.24

2. The height, H cm, of a table is measured as 39 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.024 \times 10^2 \qquad 2400 \times 10^{-4} \qquad 2400 \qquad 0.24 \times 10^{-1}$$

4. Simplify $\qquad 7a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $7(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 246$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 6 cheese sandwiches and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad x^2 + y^2 = 64$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad x + y = 1$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
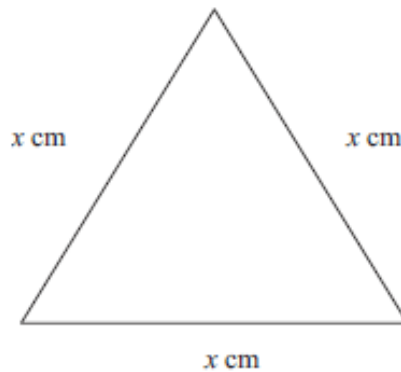
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 520$ correct to 3 significant figures. $f = 3.45$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 3.5 g/cm^3.
 230 g of liquid A and 150 g of liquid B are mixed to make liquid C.
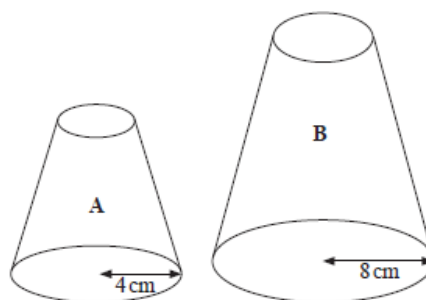Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
9 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

Leytonstone School Ver. (E)
Mr B Przystawski

12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 9 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £4300 in a variable rate compound interest account. The interest is

1.23% for the first year, 3.5% for the second year and 4.34% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 19%. The sale price of a digital camera is £430. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

x cm   *x* cm

x cm

The area of the equilateral triangle is 100 cm². Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

B

A

4 cm   8 cm

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 140 cm².
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 850 cm³.
(b) Work out the volume of shape **A**.

1. Work out 5.6 × 0.24

2. The height, H cm, of a table is measured as 49 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.054 \times 10^2 \qquad 5400 \times 10^{-4} \qquad 5400 \qquad 0.54 \times 10^{-1}$$

4. Simplify $\qquad 8a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $9(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 328$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 5 cheese sandwiches   and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad$ $x^2 + y^2 = 81$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad x + y = 1$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
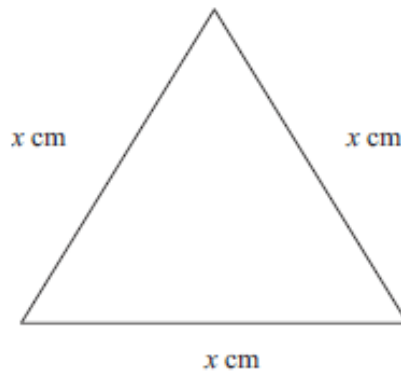
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 230$ correct to 3 significant figures. $f = 65.4$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 6.2 g/cm^3.
 540 g of liquid A and 150 g of liquid B are mixed to make liquid C.
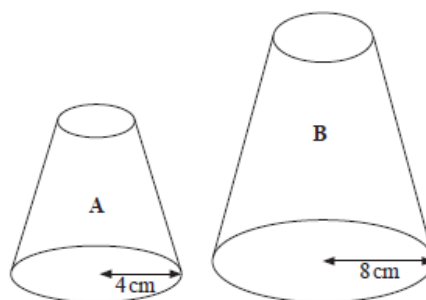Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
10 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 3 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £23000 in a variable rate compound interest account. The interest is

4.23% for the first year, 3.5% for the second year and 3.52% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 21%. The sale price of a digital camera is £120. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

The area of the equilateral triangle is 49 cm². Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 70 cm².
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 950 cm³.
(b) Work out the volume of shape **A**.

1. Work out 7.6 × 0.24

2. The height, H cm, of a table is measured as 43 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.023 \times 10^2 \qquad 2300 \times 10^{-4} \qquad 2300 \qquad 0.23 \times 10^{-1}$$

4. Simplify $\qquad 6a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $8(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 356$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 4 cheese sandwiches   and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad$ $x^2 + y^2 = 5$
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $x + y = 1$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
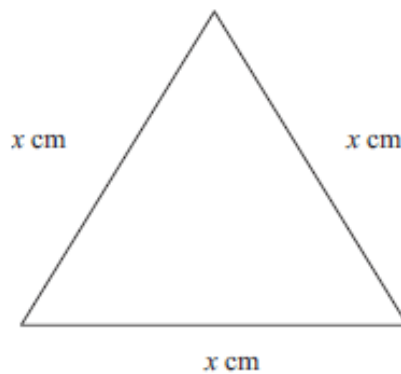
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 340$ correct to 3 significant figures. $f = 76.3$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 1.2 g/cm^3.
 650 g of liquid A and 150 g of liquid B are mixed to make liquid C.
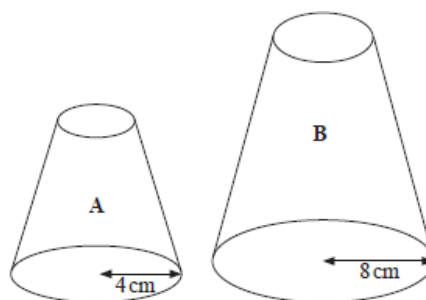Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
8 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 4 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £51000 in a variable rate compound interest account. The interest is

4.12% for the first year, 3.5% for the second year and 4.15% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 25%. The sale price of a digital camera is £320. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

x cm   *x* cm

x cm

The area of the equilateral triangle is 25 cm². Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

A

B

4 cm   8 cm

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 110 cm².
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 760 cm³.
(b) Work out the volume of shape **A**.

Leytonstone School Ver. (G)
Mr B Przystawski

1. Work out 56.4 × 0.24

2. The height, H cm, of a table is measured as 42 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.014 \times 10^2 \qquad 1400 \times 10^{-4} \qquad 1400 \qquad 0.14 \times 10^{-1}$$

4. Simplify $\qquad 5a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $3(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 412$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 3 cheese sandwiches   and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad \begin{aligned} x^2 + y^2 &= 10 \\ x + y &= 1 \end{aligned}$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
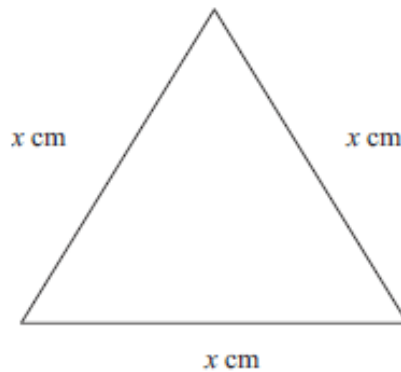
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 540$ correct to 3 significant figures. $f = 43.5$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 3.4 g/cm^3.
 340 g of liquid A and 150 g of liquid B are mixed to make liquid C.
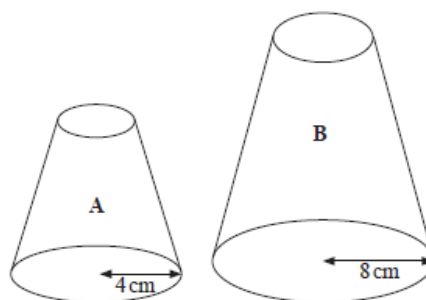Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
9 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

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12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 5 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £23000 in a variable rate compound interest account. The interest is

2.23% for the first year, 3.5% for the second year and 2.31% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 24%. The sale price of a digital camera is £430. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

The area of the equilateral triangle is 9 cm². Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 210 cm².
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 850 cm³.
(b) Work out the volume of shape **A**.

1. Work out 8.5 × 0.24

2. The height, H cm, of a table is measured as 37 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.053 \times 10^2 \qquad 5300 \times 10^{-4} \qquad 5300 \qquad 0.53 \times 10^{-1}$$

4. Simplify $\qquad 9a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $5(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 235$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 2 cheese sandwiches   and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad \begin{aligned} x^2 + y^2 &= 12 \\ x + y &= 1 \end{aligned}$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
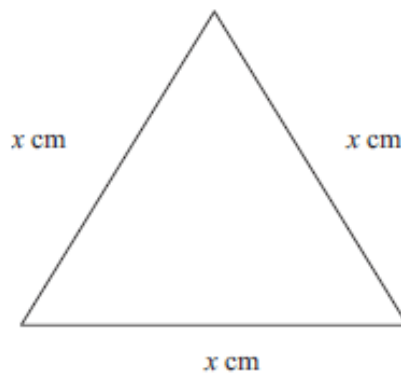
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 520$ correct to 3 significant figures. $f = 23.8$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 5.2 g/cm^3.
 520 g of liquid A and 150 g of liquid B are mixed to make liquid C.
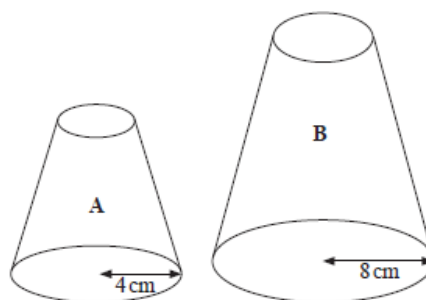Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
7 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 7 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £54000 in a variable rate compound interest account. The interest is

2.56% for the first year, 3.5% for the second year and 5.12% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 27%. The sale price of a digital camera is £465. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

x cm   *x* cm

x cm

The area of the equilateral triangle is 121 cm^2. Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

B

A

4 cm   8 cm

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 220 cm^2.
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 890 cm^3.
(b) Work out the volume of shape **A**.

1. Work out 2.24 × 0.24

2. The height, H cm, of a table is measured as 76 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.046 \times 10^2 \qquad 4600 \times 10^{-4} \qquad 4600 \qquad 0.46 \times 10^{-1}$$

4. Simplify $\qquad 3a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $6(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 650$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 3 cheese sandwiches   and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad \begin{aligned} x^2 + y^2 &= 17 \\ x + y &= 1 \end{aligned}$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
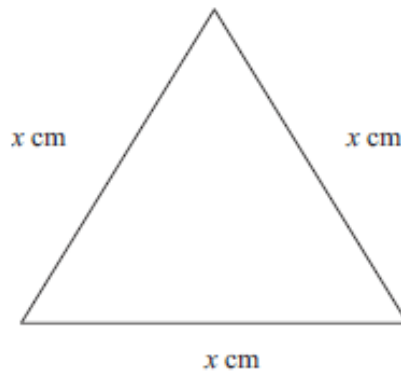
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 320$ correct to 3 significant figures. $f = 25.6$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm³. Liquid B has a density of 1.8 g/cm³.
 300 g of liquid A and 150 g of liquid B are mixed to make liquid C.
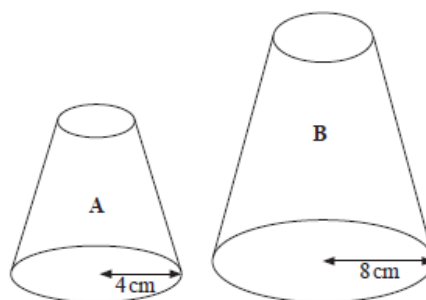Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
6 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

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12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 8 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £23000 in a variable rate compound interest account. The interest is

2.76% for the first year, 3.5% for the second year and 2.15% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 28%. The sale price of a digital camera is £376. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

The area of the equilateral triangle is 144 cm². Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 240 cm².
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 870 cm³.
(b) Work out the volume of shape **A**.

1. Work out 45.2 × 0.24

2. The height, H cm, of a table is measured as 64 cm correct to the nearest centimetre. Complete the following statement to show the range of possible values of H.

3. Write the following numbers in order of size.
Start with the smallest number.

$$0.087 \times 10^2 \qquad 8700 \times 10^{-4} \qquad 8700 \qquad 0.87 \times 10^{-1}$$

4. Simplify $\qquad 4a^2b \times 3a^3b \times b$

5. Make q the subject of the formula $7(q + p) = 4 - 8p$. Give your answer in its simplest form.

6. M is directly proportional to L^3. When $L = 2$, $M = 420$. Find the value of M when $L = 4$.

7. There are three different types of sandwiches on a shelf.
There are: 4 egg sandwiches, 8 cheese sandwiches and 2 ham sandwiches.
Erin takes at random 2 of these sandwiches.
Work out the probability that she takes 2 different types of sandwiches.

8. By drawing the functions on the grid, solve the equations $\qquad \begin{aligned} x^2 + y^2 &= 27 \\ x + y &= 1 \end{aligned}$

9. The average fuel consumption (c) of a car, in kilometres per litre, is given by the formula
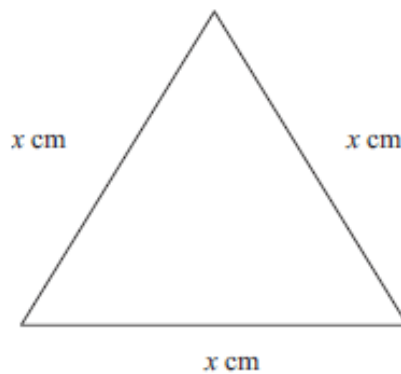
$$c = \frac{d}{f}$$

where d is the distance travelled in kilometres and f is the fuel used in litres.
$d = 430$ correct to 3 significant figures. $f = 64.3$ correct to 1 decimal place.
By considering bounds, work out the value of c to a suitable degree of accuracy.
You must show **all** of your working **and** give a reason for your final answer.

10. Liquid A has a density of 2.7 g/cm^3. Liquid B has a density of 1.9 g/cm^3.
 430 g of liquid A and 150 g of liquid B are mixed to make liquid C.
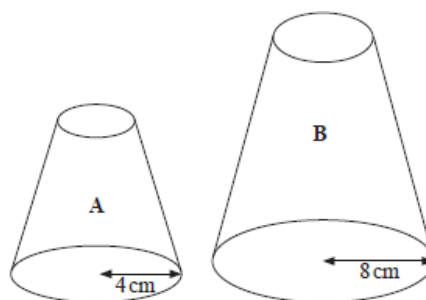Work out the density of liquid C.

11. Phil has some sweets in a bag. 5 of the sweets are orange. 7 of the sweets are red.
5 of the sweets are yellow. Phil takes at random **two** sweets from the bag.
Work out the probability that the sweets will **not** be the same colour.

12. *P* is inversely proportional to the square of *x*. Given that *x* = 5 when *P* = 9 , find the value of *P* when *x* = 10. Give your answer correct to 2 decimal places.

13. The line **L** is a tangent to the circle $x^2 + y^2 = 45$ at the point (–3, 6). The line **L** crosses the *x*-axis at the point *P*. Work out the coordinates of *P*.

14. Andy invests £53000 in a variable rate compound interest account. The interest is

2.34% for the first year, 3.5% for the second year and 2.87% for the third year
Work out the value of Andy's investment at the end of 3 years.

15. In a sale, normal prices are reduced by 35%. The sale price of a digital camera is £845. Work out the normal price of the digital camera.

16. The diagram shows an equilateral triangle.

x cm   *x* cm

x cm

The area of the equilateral triangle is 169 cm². Find the value of *x*.
Give your answer correct to 3 significant figures.

17.

B

A

4 cm   8 cm

Two solid shapes, **A** and **B**, are mathematically similar.
The base of shape **A** is a circle with radius 4 cm.
The base of shape **B** is a circle with radius 8 cm.
The surface area of shape **A** is 320 cm².
(a) Work out the surface area of shape **B**.
The volume of shape **B** is 930 cm³.
(b) Work out the volume of shape **A**.

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Mr B Przystawski