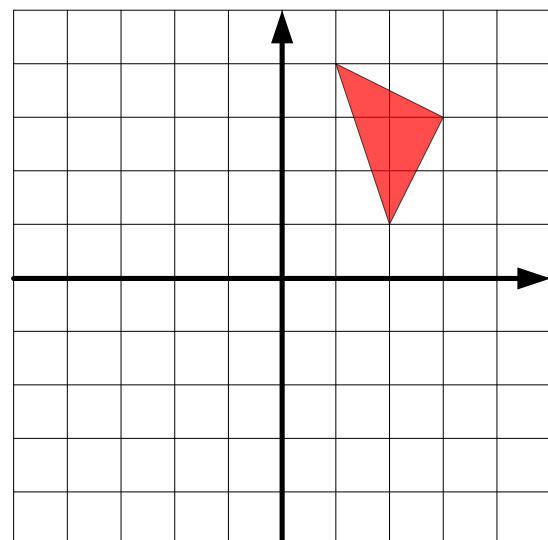
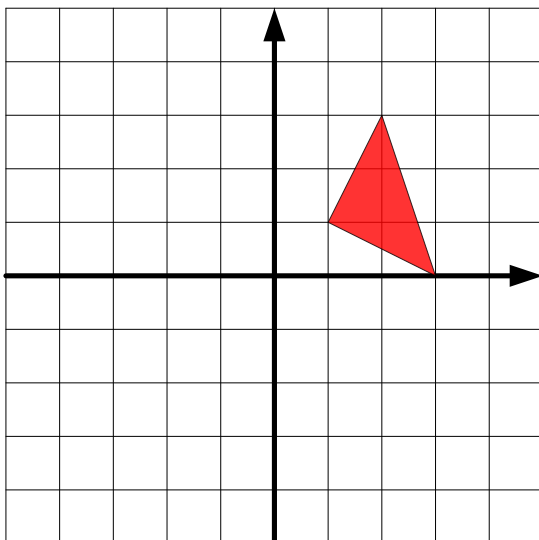
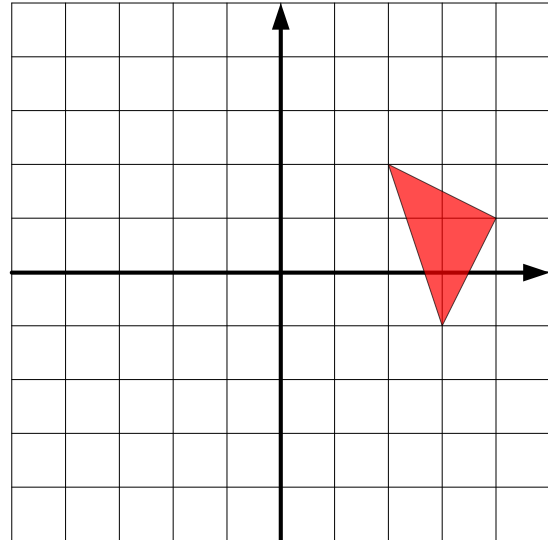
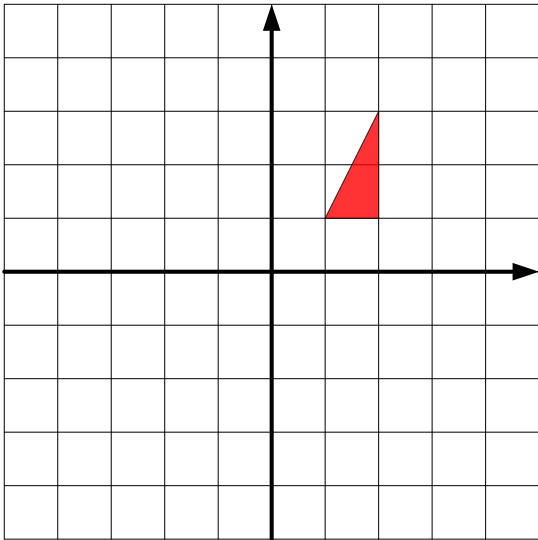


Key Stage 3 Revision

1 Reflect the shapes in the **y** axis.

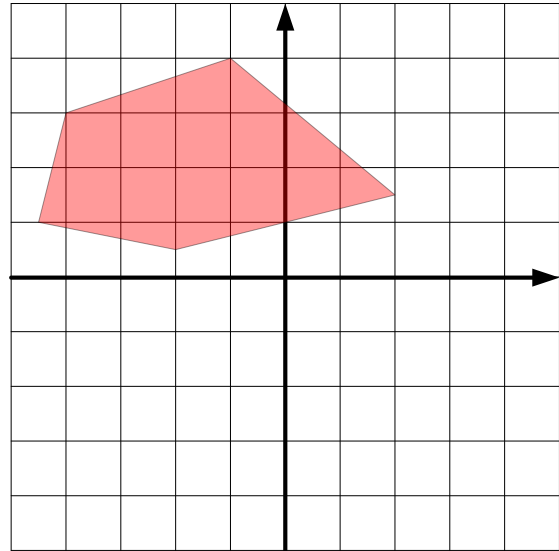
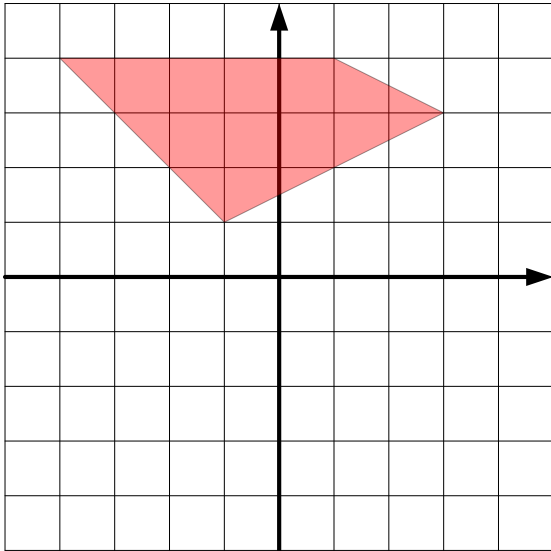


2 Below is a list of numbers.

15 16 17 18 19 20 21 22 23 24 25

- List all the prime numbers.
- Write down all the numbers that are multiples of 3.
- Write down all the factors of 100
- Write down all the square numbers.

3 Reflect the following shapes in the **x** axis:



4 Below is a list of numbers.

2 3 5 6 7 8 9 11 12 15 25

- a List all the prime numbers
- b Write down all the factors of 24.
- c Write down all the powers of 5.
- d Write down all the powers of 2.
- e Write down all the cube numbers.
- f Write down all the square numbers.
- g Write down a perfect number.
- h Write down all the multiples of 3.
- i Write down all the factors of 36.

5 Round the following numbers to the given degree of accuracy.

- a 67 382 to the nearest hundred.
- b 82 381 to the nearest thousand.
- c 99 983 to the nearest thousand.
- d 839 to one significant figure.
- e 83.918 to one decimal place.
- f 0.008912 to one significant figure.
- g 724.931 to the nearest ten.
- h 937, 298 to the nearest ten.
- i 0.392 to the nearest whole one.
- j 49.928 to the nearest integer.
- k 9 238 to two significant figures.
- l 0.981 to one significant figure.
- m 8 to two significant figures.
- n 7.9 to two decimal places.
- o 0.00399319 to two significant figures.

6 Estimate the value of the following:

a $\frac{8.9^2 + 483}{4.525} \approx$

b $\frac{12.7^2 + 837}{9.873} \approx$

c $\frac{6.7^2 + \sqrt{48}}{6.8013} \approx$

d $\frac{4.9^2 + \sqrt{64}}{8.245} =$

e $\frac{8.9^2 \times 517}{9.684} =$

7 Billy is b years old. Alex is two years older than Billy. Joanne is twice as old as Alex.

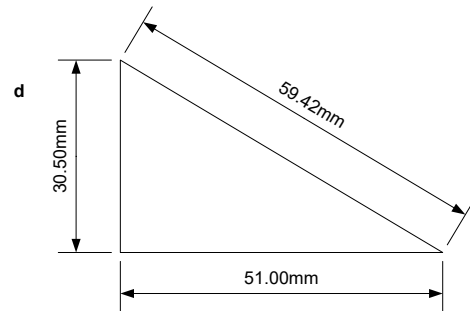
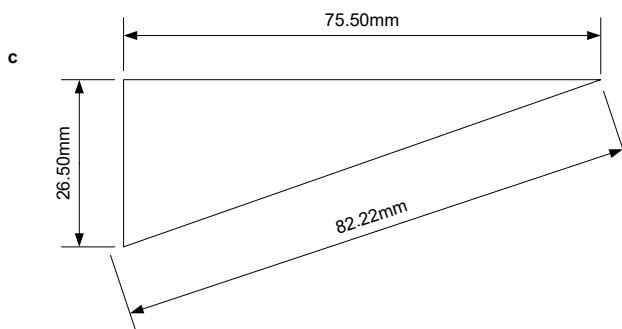
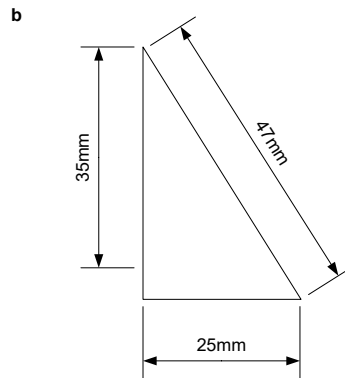
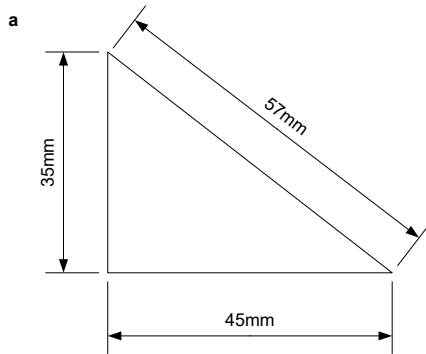
The sum of their ages is 54 years old.

a Form an equation to represent their ages.

b How old is each person?

8 All the triangles below are right angled triangles.

Find their perimeter and their area. Make sure you show *how* to work it out.



9 Joanne is j years old. Her husband is 5 years older than she is. Her daughter is half the age of her husband. Their total age is 135.

a Form an equation to show their total ages.

b How old is each person?

c What is the range of their ages?

10 Write each of the following numbers in standard form.

a 50000

b 0.003

c 493.903

d 0.00205

11 Write each of the following numbers in ordinary form.

a 7×10^4

b 3.0492×10^7

c 9.382×10^{-4}

d 5.003×10^{-2}

e 1.2×10^3

f 7×10^{-6}

g 5.098×10^{-5}

12 Find the LCM(32,44) – HCF(32,44)

- 13 Two lights are flashing.** One flashes once every 20 seconds while the other flashes once every 18 seconds. They flash together at exactly 9am. At what time do they next flash simultaneously?

Another light flashes every 28 seconds. If all three lights start flashing simultaneously at 11:30 am, what time will then next flash simultaneously?

- 14 Evaluate each of the following. Give your answer in its simplest form where necessary.**

a $\frac{7}{12} \times \frac{20}{21} =$

b $\frac{4}{5} + \frac{11}{20} =$

c $\frac{9}{10} - \frac{7}{20} =$

d $\frac{7}{8} \div \frac{9}{16} =$

e $\frac{11}{23} \times \frac{25}{44} =$

f $\frac{9}{11} + \frac{7}{8} =$

g $\frac{7}{12} - \frac{4}{9} =$

h $8 \times \frac{14}{15} =$

i $9 \times \frac{3}{4} =$

j $\frac{7}{9} \div \frac{7}{18} =$

- 15 Write the following numbers as a product of prime factors.**

a 48

b 54

c 72

d 64

16 Simplify the expressions leaving your answers in index form.

a $6^7 \times 6^3 \times 6^4 =$

b $36 \times \frac{6^4}{6} =$

c $4a \times 5a^2 \times 4a^7 =$

d $\frac{g^7 \times g^4}{g^3} =$

e $(6^4)^5 =$

f $\left(\frac{2}{3}\right)^3 =$

g $36^4 \times 6^3 \times 216^{-5} =$

17 Evaluate each of the following

a $5^3 =$

b $\sqrt{81} \times \left(\frac{1}{3}\right)^2 =$

c $10^4 =$

d $\sqrt{64} + \sqrt{49} + \sqrt{225} + \sqrt{196} =$

18 Simplify each expression below

a $k + k + k + k + k + k =$

b $3 \times e \times f \times 2 =$

c $2 \times w \times w \times w =$

19 Give your answer in standard form

a $\frac{8 \times 10^2 \times 5 \times 10^3}{4 \times 10^{-2}} =$

b $\frac{9 \times 10^8 \times 8 \times 10^7}{6 \times 10^5} =$

c $\frac{12 \times 10^3 \times 8.6 \times 10^5}{2.4 \times 10^3} =$

20 Work out the upper and lower bounds of the following and write the error interval

a 7.9 mm (rounded to 1 decimal place)

b 30 miles (rounded to one significant figure)

c 0.83 kg (rounded to 2 significant figures)

d 0.083 m (rounded to 2 significant figures)

e 9.6 m (rounded to one decimal place)

21 Expand and simplify

a $6(x + 3) + 7(3x - 9) - 5(3x - 12) =$

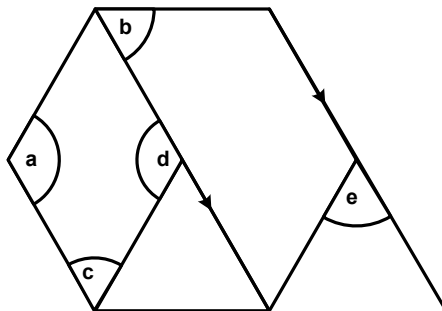
b $7(3x + 5) + 4(x - 2) - 4(2x - 1) =$

c $8(5x + 17) + 5(6x - 7) - 3(8x - 4) + 13(4x - 2) =$

22 For the following equation, what is the lowest value of x that yields a positive result?

$$5(4x + 12) - 7(8 - 3x) + 5(4x - 24) + 9(8 - 11x) < 0$$

23 a Find the size of the angles shown below. The regular hexagon and the equilateral triangle have edges that are the same length.



b What other shapes have been formed?

24 The menu below will make enough soup to feed 6 people. What amount of each ingredient would you need to feed 15 people?

Pistou Soup (to feed 6 people)

150 g thick cut bacon
200g of fresh white haricot beans
100g of fresh red haricot beans
250g of sliced flat green beans
2 medium floury diced potatoes
3 tomatoes skinned, seeds removed and chopped
4 medium courgettes chopped
salt and freshly ground black pepper (to taste)
100g small macaroni
FOR THE PISTOU
3 garlic cloves, smashed and peeled
course sea salt to taste
30g of fresh basil leaves
2 small tomatoes, skinned, seeds removed and chopped
freshly ground black pepper
25g grated mimolette cheese
3 tablespoons of olive oil

Pistou Soup (to feed 15 people)

_____ thick cut bacon
_____ of fresh white haricot beans
_____ of fresh red haricot beans
_____ of sliced flat green beans
_____ medium floury diced potatoes
_____ tomatoes skinned, seeds removed and chopped
_____ medium courgettes chopped
salt and freshly ground black pepper (to taste)
_____ small macaroni
FOR THE PISTOU
_____ garlic cloves, smashed and peeled
course sea salt to taste
_____ of fresh basil leaves
_____ small tomatoes, skinned, seeds removed and chopped
freshly ground black pepper
_____ grated mimolette cheese
_____ tablespoons of olive oil

25 Solve each of the following

a $3x + 8 = 5x - 7$

b $9x + 8 = 5x + 32$

c $5x - 12 = 3x + 5$

d $7x - 35 = x + 7$

26 The heights of Abbie, Billy and Charlie are in the ratio 6:7:9. Charlie is 180 cm tall. How tall are the other two people?

27 Joe is taking a trip to Singapore. He wants to convert £1250 into Singaporean dollars.

The current exchange rate is £1 = \$1.95.

a How many dollars will Joe get?

b On his return, Joe has \$260 remaining. He changes it back into pounds. How much does he get?