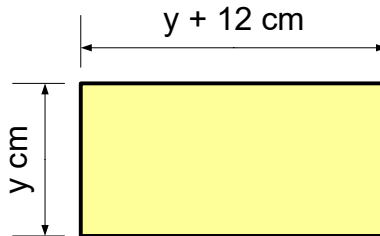


Writing Expressions and Equations

1. Apples cost a pence each. Bananas cost b pence each.
Write down an expression for the cost of 3 apples and 5 bananas.

2. Martin is d years old.
Jennifer is 3 years younger than Martin.
Connor is twice as old as Martin.
 - a. Write an expression for Jennifer's age.
 - b. Write an expression for Connor's age.
 - c. Write an expression for the sum of the three ages.

3. Write an expression for the perimeter of the following rectangle.



4. Nicola has w marbles.
Sean has 25 marbles.
Vicky has 5 more marbles than Nicola.
 - a. Write an expression for the number of marbles that Vicky has.
 - b. Write an expression for the number of marbles that all three children have.
 - c. Altogether there are 100 marbles. How many marbles does Nicola have?
5. An express bus takes 1 hour to travel from Leeds to Sheffield.
It takes a standard bus m minutes longer to make the same journey.
 - a. Write an expression for the time it takes the standard bus.
 - b. An aircraft can fly the distance in half the time it takes a standard bus. Write an expression for the time it takes the aircraft.
6. Fred is four times as old as his younger sister, Sheila. Sheila is 4 years younger than their other sibling, Tony. How old is Tony if the total of their three ages is 46?
7. Michael has twice as much money as Bill. Bill has £45 less than Sarah. How much does each person have if the total of all their money is £65?

8. John's bag is 12 kg heavier than Mary's. Abdul's bag is twice as heavy as Mary's. How much is each person carrying if the total weight of their load is 56kg?
9. An aircraft has b seats in each row in business class and e seats in each row in economy class.
There are 7 rows in business class and 46 rows in economy.

- a. Write an expression in terms of b and e for the number of seats on the plane.

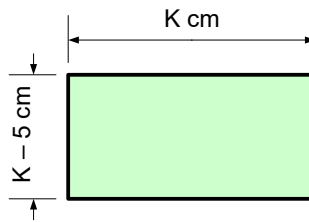
Business class tickets cost p pounds each.

Economy class tickets cost £845 less than the business class tickets.

- b. Write an expression for the total money taken by selling business class passenger seats on the aircraft.
- c. Write an expression for the total money taken from seat sales for the aircraft.

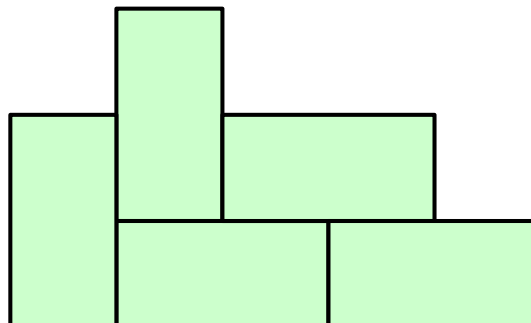
10. Look at the diagram below.

A single block has the dimensions shown.



The shape below is constructed of blocks equal to the one shown above.

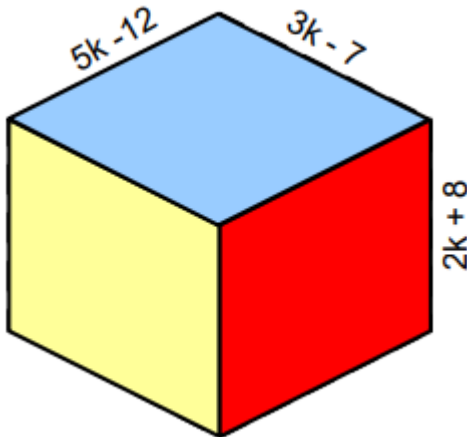
What is the area of the shape if the perimeter of the shape below is 280 cm?



11. The times for five runners in a race are given as 32, 37, 35, 38 and 34 seconds. What is the mean average time for the runners in the race?

12. The times for five runners in a race are given as k , $k-3$, $k+2$, $k+7$ and $2k-14$ seconds. What is the mean average time for the runners in the race?

13. The dimensions of a cuboid are detailed below.



Find an expression for:

- the length of the edges;
- the surface area;
- the volume

of the cuboid.

14. A circle has a radius of $(7t + 3)$ cm.

- Write an expression for the area of the circle in terms of t .
- If the circumference has a length of 118π cm, what is the value of t ?

15. Bill is three times as old as Sonya. Sonya is two years older than Nazma. Nazma is 12 years younger than Pippa. If their combined ages are 70 years old, how old is each person?

16. Three hospitals serve Mid Yorkshire region NHS Trust. The hospitals are Dewsbury, Pinderfields and Pontefract. On one particular Saturday, the number of patients treated at Dewsbury is one fifth those treated at Pinderfields. Pinderfields treats 345 more patients than at Pontefract. Altogether, 557 patients are treated across the Trust. How many does each hospital treat?