

Past Paper Questions – Formation and Simplification of Expressions

6. (a) Simplify  $y^3 \times y^4$

.....  
(1)

(b) Expand and simplify  $5(2x + 3) - 2(x - 1)$

.....  
(2)

(c) (i) Factorise  $4a + 6$

.....

(ii) Factorise completely  $6p^2 - 9pq$

.....  
(3)

12. Simplify

(a)  $3a^2b \times 4a^3b^2$

.....  
(2)

(b)  $\left(\frac{5p^3}{q}\right)^3$

.....  
(2)

(c)  $\frac{12t^5}{u^4} \times \frac{u^3}{3t^2}$

.....  
(2)

11. Factorise completely

$$8x^2 + 10xy$$

.....  
(Total 2 marks)

18.

(a) Simplify  $(x^{\frac{1}{2}})^6$ .

19.

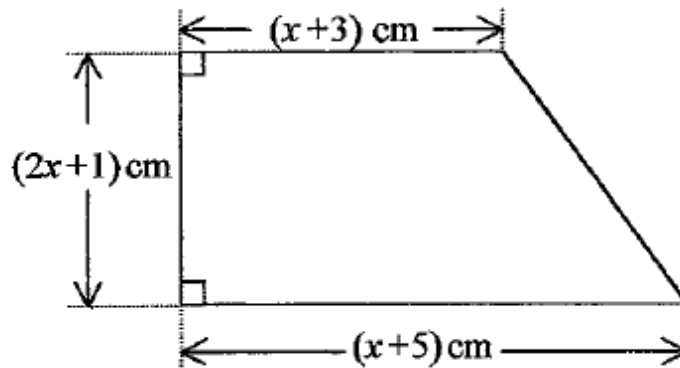


Diagram NOT accurately drawn

- (a) Find an expression for the area, in  $\text{cm}^2$ , of this trapezium.  
Give your answer in the form  $ax^2 + bx + c$ , where  $a$ ,  $b$  and  $c$  are integers.

The trapezium is cut from a square of side  $(2x + 5)$  cm.

On the diagram, the shaded region is the area of the square that is left.

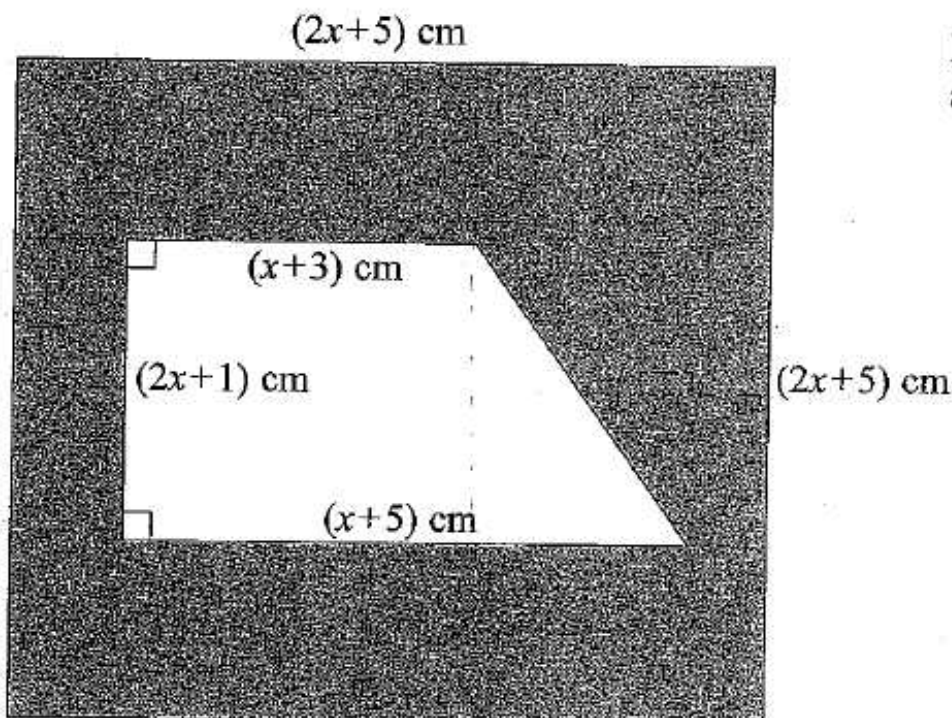


Diagram NOT accurately drawn

- (b) Show that the area of the shaded region is  $(2x^2 + 11x + 21) \text{ cm}^2$ .

7. (a) Simplify

$$\frac{x^7}{x^2}$$

.....  
(1)

(b) Factorise

$$4x + 6$$

.....  
(1)

(c) Multiply out and simplify

$$(x + 3)(x - 2)$$

.....  
(2)

(d) Simplify

$$2x^3y^2 \times x^2y^4$$

.....  
(2)

(e) Factorise completely

$$3a^2 - 12b^2$$

.....  
(3)

4. (a) Expand and simplify

$$3(2x - 1) - 2(2x - 3)$$

.....  
(2)

(b) Factorise

$$y^2 + y$$

.....  
(1)

14. Prove that,

$$(n + 1)^2 - (n - 1)^2$$

is a multiple of 4, for all positive integer values of  $n$ .