TAKE 10 ... EXPANSION OF BRACKET

JustMaths

Q1. (a) Expand $4(3x + 5)$

(1)

(b) Expand and simplify $2(x - 4) + 3(x + 5)$

(2)

(c) Expand and simplify $(x + 4)(x + 6)$

(2)

Q2. (a) Expand $3(2 + t)$

(1)

(b) Expand $3x(2x + 5)$

(2)

(c) Expand and simplify $(m + 3)(m + 10)$

(2)

Q3. (a) Simplify $3y + 2x - 4 + 5x + 7$

(1)

(b) Factorise $2x^2 - 4x$

(2)

(c) Expand and simplify $11 - 3(x + 2)$

(2)

(d) Expand and simplify $(x - 6)(3x + 7)$

(2)

Q4. (a) Expand and simplify $(y + 2)(y + 5)$

(2)

(b) Factorise $e^2 + e - 12$

(2)

Q5. (a) Expand and simplify $(y - 2)(y - 5)$

(2)

(b) Prove algebraically that $(2n + 1)^2 - (2n + 1)$ is an even number for all positive integer values of n.

(3)

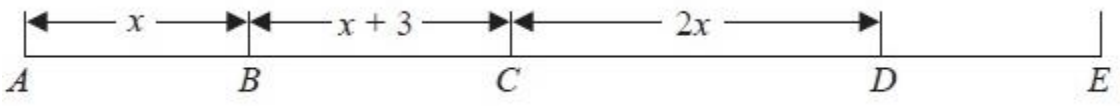
Q6. (a) Simplify $2e + 3f - e + 4f$

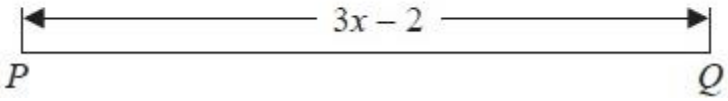
(2)

(b) Expand $5(2c + 3d)$

(1)

(c) Here are two straight lines, $ABCDE$ and PQ.





In the diagrams all the lengths are in cm.

$AE = 2PQ$.

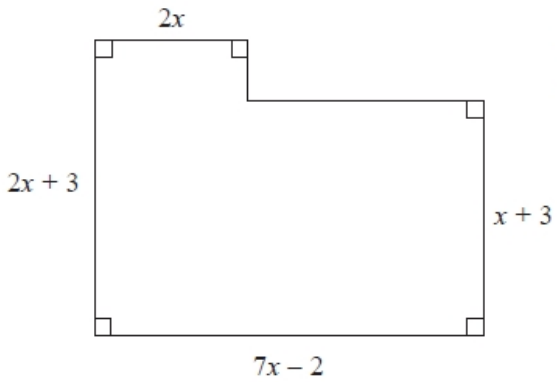
Find an expression, in terms of x, for the length of DE. Give your answer in its simplest form.

(4)

Q7. All the measurements in the diagram are in centimetres.

The area of the shape is A cm^2.

Find a formula for A in terms of x. You must write your formula as simply as possible.

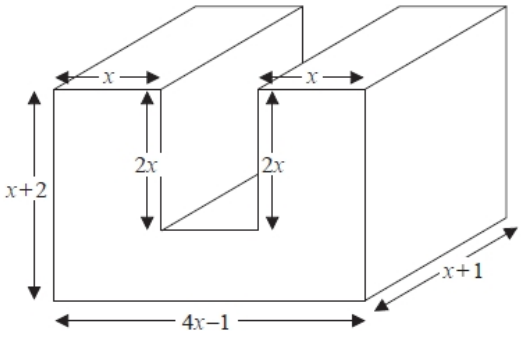


(4)

Q8. Show that $(n + 3)^2 - (n - 3)^2$ is an even number for all positive integer values of n.

(3)

Q9. The diagram shows a prism.



All measurements are in centimetres. All corners are right angles.

Find an expression, in terms of x, for the volume, in cm^3, of the prism.
You must show your working. Give your answer in its simplest form.

(4)

Q10. Prove that the square of an odd number is always 1 more than a multiple of 4

(4)