Test - Expanding binomials and taking out common factors

Year: Year 9 · Duration: 45 minutes · /20

Name:	Date:	**Mark: /20**

Question	1	2	3	4	5	Total
marks	4	4	4	4	4	**20**
Mark						

Show your working.

Question 1 (4 marks)

Question 1 – Expanding

Expand and simplify where possible.

a. $5(2x - 3)$ (1 mark)
b. $(x + 7)(x - 3)$ (2 marks)
c. $3(x + 2) - (x - 4)$ (1 mark)

Question 2 (4 marks)

Question 2 – Factorising

Factorise fully.

a. $12x - 18$ (1 mark)
b. $x^2 + 9x$ (1 mark)
c. $15ab + 10a^2$ (2 marks)

Question 3 (4 marks)

Question 3 – Squares

Expand and simplify.

a. $(x + 5)^2$ (2 marks)
b. $(2x + 3)(2x - 3)$ (1 mark)
c. Factorise $x^2 - 64$. (1 mark)

Question 4 (4 marks)

Question 4 – Problem: the lawn

A rectangular lawn is $(x+5)$ metres by $(x+3)$ metres.

a. Show that its area is $x^2+8x+15$. (2 marks)
b. Find the area when $x=6$. (1 mark)
c. Turf costs £2.50 per m^2. Find the cost of the turf when $x=6$. (1 mark)

Question 5 (4 marks)

Question 5 – Problem: number trick

Sam says: "Think of a number n. Add 3. Multiply by 4. Subtract 12. Divide by your number. The answer is always 4."

a. Write Sam's steps as one algebraic expression. (2 marks)
b. Simplify to show that Sam is right for any $n \neq 0$. (2 marks)