Write your name, centre number and candidate number in the boxes below.

Surname	Other names

Centre number | | | | | |

Candidate number | | | | |

STEM | Exam Builder

Expressions, brackets and simplifying

Time allowed: 35 minutes

Subject code **0580**

Mathematics

Questions from Paper 1, Paper 2, Paper 3 and Paper 4

You must have: a ruler marked in centimetres and millimetres, a protractor, compasses, a pen, an HB pencil and an eraser.
You may use a calculator.

Total marks

/ 28

Instructions

- Answer every question in the space provided on this paper.
- Write in black or dark blue ink. Pencil may be used for diagrams and graphs.
- Fill in your name, centre number and candidate number above.
- Show your working: a correct method can earn marks even if the answer is wrong.
- Unless a question says otherwise, give answers that are not exact to 3 significant figures, and angles in degrees to 1 decimal place.

Information

- This paper has 10 questions worth 28 marks in total.
- The marks for each question or part are shown in brackets, for example [3].

Advice

- Read every question through once before you write anything.
- Use the marks in brackets to judge how long to spend on each part.
- If you finish early, go back and check your working.

STEM | Exam Builder

Print at 100% (Actual size) so diagrams keep their real measurements.

1 **(a)** A ticket costs \$18.

Write down an expression, in dollars, for the cost of t tickets.

\$ ..... [1]

(b) A bag contains n red balls and 16 green balls.

Write down an expression for the total number of balls in the bag.

..... [1]

(a) Algebraic notation (b) Algebraic notation Click for more variations

2 Find the value of $7x + 3y$ when $x = 12$ and $y = -6$.

..... [2]

Substitution Click for more variations

3 Expand the brackets and simplify.

$$7(2x+3y)-x(14-y)$$

..... [2]

Expanding and simplifying single brackets Click for more variations

4 Expand and simplify.

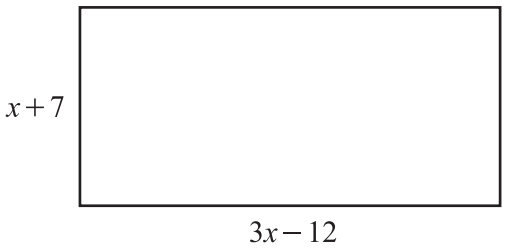
$$(x-4)(x-7)$$

..... [2]

Expanding double brackets Click for more variations

STEM | Exam Builder

5



NOT TO SCALE

The diagram shows a rectangle with length $3x-12$ and width $x+7$.

Find an expression for the perimeter of the rectangle.
Give your answer in its simplest form.

..... [3]

Collecting like terms Click for more variations

6 **(a)** $T = 3(5P-8)+4$

Find the value of T when $P = 12$.

$T =$ ..... [2]

(b) $W = 4t+8$

Find the value of t when $W = 369$.

$t =$ ..... [2]

(a) Substitution (b) Substitution Click for more variations

STEM | Exam Builder

7 Expand and simplify.

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

..... [3]

Expanding double brackets Click for more variations

8 Expand and simplify.

(a) $7(x+2)+4(3x-5)$

..... [2]

(b) $(3x-y)(5x+2y)$

..... [2]

(a) Expanding and simplifying single brackets (b) Expanding double brackets Click for more variations

9 Expand and simplify.

$$(x-2)(2x+5)(x+3)$$

STEM | Exam Builder

..... [3]

Expanding triple brackets Click for more variations

10 $(x+a)(x+2)(2x+3)$ is equivalent to $2x^3+bx^2+cx-18$.

Find the value of each of a, b and c.

$a =$ .....

$b =$ .....

$c =$ ..... [3]

Expanding triple brackets Click for more variations

STEM | Exam Builder