



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Show That (Algebraic Arguments) · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☒ Secure

☐ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Show That (Algebraic Arguments)

Total marks available: 84

● Show That (Algebraic Arguments)

Q1

[2 marks]

Show that $3x + 4 + x + 8$ simplifies to $4x + 12$.

Q2

[2 marks]

Show that $6(y + 8) + 2 = 6y + 50$.

Q3

[2 marks]

Show that $3(x + 4) + 2 = 3x + 14$.

Q4

[2 marks]

Show that $4(p + 5) + 2(p + 4)$ simplifies to $6p + 28$.

Q5

[2 marks]

Show that $3(y + 4) + 5(y + 1)$ simplifies to $8y + 17$.

Q6

[2 marks]

Show that $5(x + 5) + 4(x + 5)$ simplifies to $9x + 45$.

Q7

[2 marks]

Show that $3m + 4 + 2m + 6$ simplifies to $5m + 10$.

Q8

[2 marks]

Show that $2(m + 4) + 4m = 6m + 8$.

Q9

[2 marks]

Show that $7m + 8 + 4m - 2$ simplifies to $11m + 6$.

Q10

[2 marks]

Show that $5p + 4 + 4p + 8$ simplifies to $9p + 12$.

Q11

[3 marks]

The sides of a triangle are $(x + 5)$ cm, $(x + 3)$ cm and $(3x - 2)$ cm. Show that the perimeter of the triangle is $(5x + 6)$ cm.

Q12

[3 marks]

Show that $6(y + 6) + 5(y - 6)$ simplifies to $11y + 6$.

Q13

[3 marks]

An expression is added to $5(m + 5)$. The result is $10m + 34$. Show that the expression that was added is $5m + 9$.

Q14

[3 marks]

A rectangle has length $(x + 2)$ cm and width 4 cm. Show that the perimeter of the rectangle is $(2x + 12)$ cm.

Q15

[3 marks]

Show that $(8a + 1) - (2a - 1)$ simplifies to $6a + 2$.

Q16

[3 marks]

Show that $4(y + 5) - 2(y - 3)$ simplifies to $2y + 26$.

Q17

[3 marks]

Show that $3(a + 6) - 2(a - 2)$ simplifies to $a + 22$.

Q18

[3 marks]

Show that $3(y + 2) - 2(y - 5)$ simplifies to $y + 16$.

Q19

[3 marks]

The sides of a triangle are $(n + 1)$ cm, $(n + 7)$ cm and $(n - 2)$ cm. Show that the perimeter of the triangle is $(3n + 6)$ cm.

Q20

[3 marks]

An expression is added to $2(m + 3)$. The result is $7m + 9$. Show that the expression that was added is $5m + 3$.

Q21

[4 marks]

Show that $(y + 3)(y + 1) - 3$ can be written as $y(y + 4)$.

Q22

[3 marks]

Show that $(a + 1)(a - 5) = a^2 - 4a - 5$.

Q23

[3 marks]

A square has sides of length $(y + 7)$ cm. Show that the area of the square is $(y^2 + 14y + 49)$ cm².

Q24

[4 marks]

Show that $2(9x - 8) - 4(3x - 2)$ can be written as $2(3x - 4)$.

Q25

[3 marks]

A square has sides of length $(n + 2)$ cm. Show that the area of the square is $(n^2 + 4n + 4)$ cm².

Q26

[3 marks]

Show that $(n + 1)(n + 2) = n^2 + 3n + 2$.

Q27

[4 marks]

Show that $(n + 3)(n + 6) - 18$ can be written as $n(n + 9)$.

Q28

[4 marks]

Show that $3(7p + 8) - 6(2p + 5)$ can be written as $3(3p - 2)$.

Q29

[3 marks]

Show that $(y + 5)(y + 3) = y^2 + 8y + 15$.

Q30

[3 marks]

A rectangle has length $(n + 8)$ cm and width $(n + 7)$ cm. Show that the area of the rectangle is $(n^2 + 15n + 56)$ cm².