A147 Expanding and factorising 2

Q1.

Expand and simplify $(x + 2)(x + 8)(x – 4)$

.....

(Total for question = 3 marks)

Q2.

Show that $(x + 1)(x + 2)(x + 3)$ can be written in the form $ax^3 + bx^2 + cx + d$ where a, b, c and d are positive integers.

(Total for question = 3 marks)

Q3.

(a) Expand and simplify $(x + 2)(2x – 3)(3x + 1)$

.....

(3)

(b) Simplify $n^4 \div n^{\frac{1}{2}}$

.....

(1)

(Total for question = 4 marks)

Q4.

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

.....

(Total for question = 3 marks)

Q5.

(a) Simplify $(x^{-2})^{-3}$

.....

(1)

(b) Factorise $2y^2 - 5y - 3$

.....

(2)

(Total for question = 3 marks)

Q6.

(a) Factorise $a^2 - b^2$

.....

(1)

(b) Hence, or otherwise, simplify fully $(x^2 + 4)^2 - (x2 - 2)^2$

.....

(3)

(Total for question = 4 marks)

Q7.

(a) Factorise $e^2 - 100$

. . . . . .

(1)

(b) Factorise $2x^2 - 7x - 15$

. . . . . .

(2)

(c) Simplify $\frac{(g-7)^9}{(g-7)^3}$

(1)

(Total for Question is 4 marks)

Q8.

(a) Factorise $6 + 9x$

.....

(1)

(b) Factorise $y^2 - 16$

.....

(1)

(c) Factorise $2p^2 - p - 10$

.....

(2)

(Total for Question is 4 marks)

Q9.

(a) Factorise $x^2 + 7x$

.....

(1)

(b) Factorise $y^2 – 10y + 16$

.....

(2)

*(c) (i) Factorise $2t^2 + 5t + 2$

.....

(ii) t is a positive whole number.
The expression $2t^2 + 5t + 2$ can never have a value that is a prime number.
Explain why.

.....
.....
.....

(3)

(Total for Question is 6 marks)