

Knowledge: 12

Thinking: 7

Application: 9

Communication: 4 + 2 (form)

Total: 34

Knowledge and Understanding

1. Expand and simplify

[4]

a.) $3x^3(2x^2 - 6x + 3)$

b.) $(a + 2)(a - 3) - (4a - 7)^2$

2. Factor fully

[8]

(a) $4x^3y^4 - 8x^3y + 16x^4y^2$ [2]

(b) $a^2 + 4a - 12$ [1]

(c) $5m^2 + 19m + 12$ [2]

$9x^2 - 25y^2$ [1]

(e) $4x^2 - 28x + 49$ [2]

Application Section

3. Factor fully

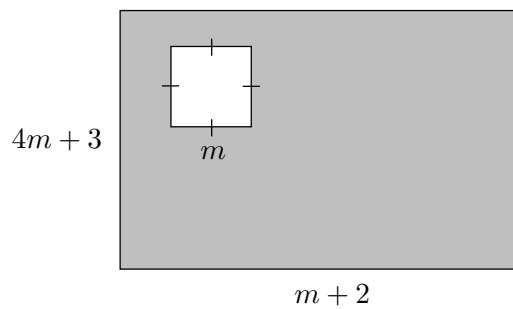
(a) $16x^4 - 81$

(b) $25 - (a + 3)^2$

4. Given the diagram below, answer the following questions

(a) Write a fully simplified expression to represent the area of the shaded region below.

[3]



(b) Fully factor your expression from part (a).

[2]

Thinking Section

5. Factor fully: $(x + 4)^3 - 9x - 36$

[4]

6. The factored form of $4x^2 - bx + 5$ is $(ax - 1)(x - c)$. Find the values of a , b , c .

[3]