




Check Your Understanding – Multiplying Polynomials

The table below identifies the key concepts from this unit.

1. Check your understanding by completing these questions.
2. Check your answers in the key provided.
3. In the table below, highlight the questions you got correct.
4. Ask peers/Dr. James about concepts where you can improve.

Key Concepts	 Mild	 Medium	 Spicy
(1 term)(2 terms)	1, 2	3, 4	5
(2 terms)(2 terms)	6, 7	8, 9	10
Area Problems	11	12, 13	14, 15

1) Determine the following products:

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

2) Determine the following products:

$$4a^2(10a^4 + 2a)$$

3) Determine the following products:

$$12a^2b(3a^6b^2 - 2ab)$$

4) Determine the following products:

$$-2x^7z^2(4x^4 - 8z^3x)$$

5) Determine the following products:

$$-0.4m^3p^2(1.2m^2pt^4 + 2.4p^2 - 4.6t^8m^2)$$

6) Determine the following products and simplify your answer:

$$(2x + 4)(4x + 8)$$

7) Determine the following products and simplify your answer:

$$(4a + 6)(3a + 10)$$

8) Determine the following products and simplify your answer:

$$(3p + 5)(2p - 4)$$

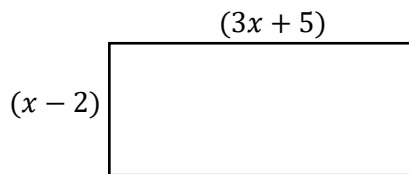
9) Determine the following products and simplify your answer:

$$(4a^2b - 2ab)(8a^2b - ab)$$

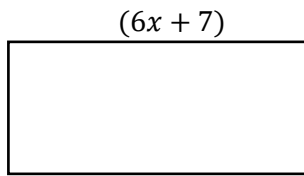
10) Determine the following products and simplify your answer:

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

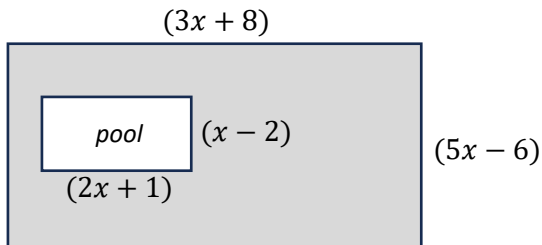
11) Determine the area of the rectangle below:



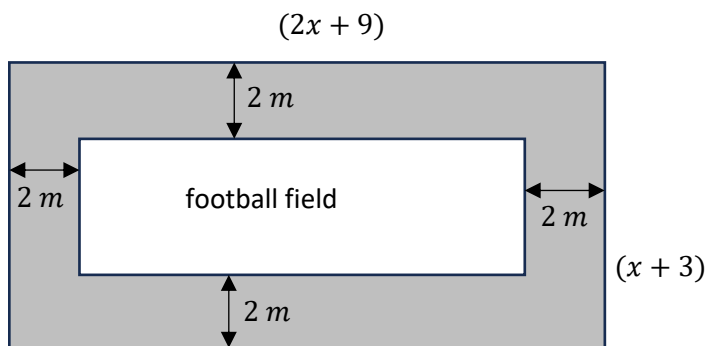
12) The perimeter of a rectangular field shown below is given by the polynomial $18x + 12$. What is the area of the field?



13) Dr. James is installing a pool in her backyard, as shown in the diagram below. What polynomial represents the area of grass (shaded in grey) that will remain?



14) A football field is surrounded by a cement sidewalk (shown in grey) as shown in the figure below. The dimensions are in metres. What is the area of the sidewalk?



15) A rectangular yard has a length of $2x + 3$ and a width of $x + 5$. If we enlarge the yard by 12 m along the length and 5 m along the width, what is the area of the enlarged yard?

Answers

1) $15x^2 + 6x$

2) $40a^6 + 8a^3$

3) $36a^8b^3 - 24a^3b^2$

4) $-8x^{11}z^2 + 16x^8z^5$

5) $-0.48m^5p^3t^4 - 0.96m^3p^4 + 1.84m^5p^2t^8$

6) $8x^2 + 32x + 32$

7) $12a^2 + 58a + 60$

8) $6p^2 - 2p - 20$

9) $32a^4b^2 - 20a^3b^2 + 2a^2b^2$

10) $4x^2 - 4x - 5$

11) $3x^2 - x - 10$

12) $18x^2 + 15x - 7$

13) $13x^2 + 25x - 46$

14) $12x + 32$

15) $2x^2 + 35x + 150$