15 Practice Test

1. Simplify

   a) $2x^5 + 3x - 6x + 5x^5 + 2$

   b) $3pq + 5qp + 7pr - 2qr$

   c) $8x^2 \times 4x^4$

   d) $2abc \times 3a^2b \times 5a^2c^6$

   e) $(6t^4)^3$

   f) $\dfrac{125d^{10}e^4}{25d^5e^6}$

   g) $\dfrac{32j^{11}k^8}{24j^{14}k^{10}l}$

2. Expand and simplify if possible

   a) $3(2x + 9)$

   b) $4x(8y - 3) - 2(4x + 7)$

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

   d) $(x - 8)^2$

3. Factorise

   a) $14c + 21d$

   b) $36ab^2c^5 - 18b^4c^3$

   c) $x^2 + 10x + 21$

   d) $x^2 - 5x - 14$

   e) $x^2 - 4x - 165$

   f) $3x^2 - 75$

4. Solve

   a) $4x - 7 = 21$

   b) $\dfrac{25x - 5}{8} = 15$

   c) $5(x - 11) = 35$

   d) $2x + 3 = 6x - 33$

   e) $(x - 3)(x + 5) = 0$

   f) $x^2 + 8x - 33 = 0$

   g) $x^2 - 23x + 102 = 0$

5. The sum of two consecutive odd numbers is 88. Form an equation and use it to find the numbers.

6. A piece of land is a rectangle and the length is eight metres longer than twice its width.

   (a) Draw a diagram

   (b) Find expressions for the area and the perimeter.

   (c) The area of the land is $640m^2$, find the length and width of the land.

   (d) Find the perimeter of the land.