Strand 2   Algebra

1. $\sum_{n=4}^{6} 3n^2$ is equal to

    A. $3 \times 4^2 + 3 \times 6^2$

    B. $3 \times 4^2 + 5^2 + 6^2$

    C. $3 \times 4^2 + 3 \times 5^2 + 3 \times 6^2$

    D. $3 \times 1^2 + 3 \times 2^2 + 3 \times 3^2 + 3 \times 4^2 + 3 \times 5^2 + 3 \times 6^2$

2.   If $2x - 5$ is a **factor** of any polynomial $f(x)$ then

    A. $f(5) = 0$

    B. $f\left(\frac{5}{2}\right) = 0$

    C. $f(-5) = 0$

    D. $f\left(-\frac{5}{2}\right) = 0$

3.   Given that $x^2 - 4x + 7 = (x - m)^2 + n$, the values of m and n are

    A. $m = 2$ and $n = 3$

    B. $m = 2$ and $n = 7$

    C. $m = -2$ and $n = 3$

    D. $m = -2$ and $n = 7$

4. Make n the **subject** of the formula given below.

$$c = \sqrt{\frac{2n+5}{n+4}}$$

5. Solve $\dfrac{x+3}{3} - \dfrac{x-2}{2} = -3$

6. Determine the values of k for which the equation $2x^2 - kx + 8 = 0$ has **two distinct** real roots.

7. Alipate and Kele save \$10 in the first week of a savings program, \$30 in the second week, \$50 in the third week , \$70 in the fourth week and so on, in an **arithmetic sequence**:

$$\$10, \ \$30, \ \$50, \ \$70, \ \dots\dots\dots\dots$$

How long will they have to continue saving if their target is to save \$81 000?

8. Consider the sequence

$$3, \ 6, \ 12, \ 24, \ 48, \ \dots\dots$$

(a) Find the tenth term.

(b) How many terms of this sequence must be added to get 786 429?

9. Simplify $\dfrac{4x+2}{2x^2 - 9x - 5}$