## Polynomials

1. (a) Show that $(x + 1)$ is a factor of $x^3 - 2x^2 - 13x - 10$.
[A10]

   (b) Hence, factorise $x^3 - 2x^2 - 13x - 10$ fully.

2. (a) Show that $(x - 3)$ is a factor of $x^3 - 6x^2 + 5x + 12$.
[A10]

   (b) Find the coordinates of the points of intersection of the curves
   $y = x^3 - 3x^2 - 5x + 8$ and $y = 3x^2 - 10x - 4$.

3. Solve: $2x^3 + 9x^2 - 6x - 5 = 0$
[A11]

4. $(x + 2)$ and $(x - 1)$ are factors of $x^3 + 2x^2 - mx + 2n = 0$
[A11]

   Calculate m and n and factorise fully.

Trigonometry

1.
[T2]

   (a) In the triangle shown, determine the value of $cosA°$.
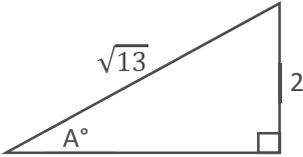
   (b) Find the exact value of $cos2A°$.

2.
[T2]

   (a) Determine the exact values of $sina°$ and $sinb°$
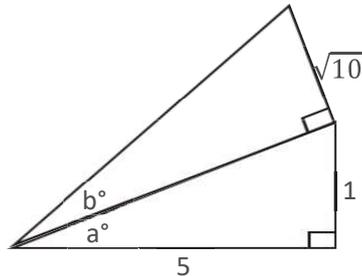
   (b) Find the exact value of $sin (a - b)°$.

3. (a) Given that $tanA° = \frac{1}{3}$, find the exact values of $sinA°$ and $sin2A°$
[T2]

   (b) By expressing $3A$ as $(2A + A)$, find the exact value of $cos3A°$.

4. Solve: $3sin2x° - 3cosx° = 0$ $(0 \leq x° \leq 360°)$
[T1]

5. Solve: $2cos2x - 5cosx + 3 = 0$ $(0 \leq x \leq 2\pi)$
[T1]

G. Rennie