Trigonometry 2

1.   Convert the following into radians:

    (a) $60°$ (b) $135°$ (c) $210°$ (d) $315°$

2.   Convert the following into degrees:
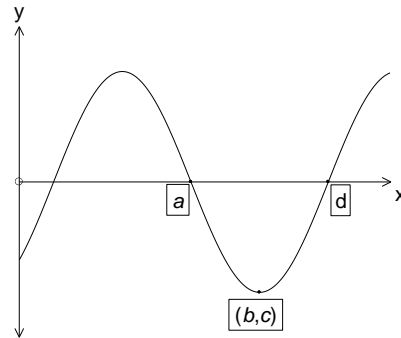
    (a) $\dfrac{\pi}{12}$ (b) $\dfrac{3\pi}{4}$ (c) $\dfrac{7\pi}{10}$ (d) $\dfrac{5\pi}{36}$

3.   Sketch and annotate the graphs of each of the following functions:

    (a) $y = 4\cos 2x° - 2$ for $0 \le x \le 2\pi$

    (b) $y = 2\sin(x - 30)°$ for $0 \le x \le 360$

4.   The graph of the function $y = 4\sin\left(x - \dfrac{\pi}{4}\right)$

    is shown opposite. Find the values of a, b, c

    and d.

5.   Solve the following equations:

    (a) $3 + \sin 2x = 3{\cdot}5$ for $0 \le x \le 2\pi$

    (b) $14\tan^2 t° = 11\tan t° + 15$ for $0 \le x \le 360$

    (c) $2\cos^2 x = \dfrac{3}{2}$ for $0 \le x \le \pi$

    (d) $2\sin(2x - 30)° - 1 = 0$ for $0 \le x \le 360$

6.   The diagram shows the graph of

    $y = \sqrt{2}\cos(2x - 30)°$. The line with equation

    $y = 1$ intersects the graph at A and B.

    Find, algebraically, the x coordinates of A and B.