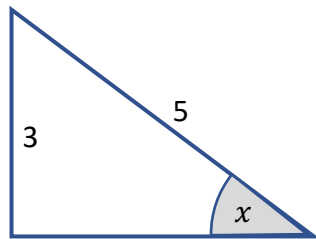# Higher Maths question bank :: Paper 1
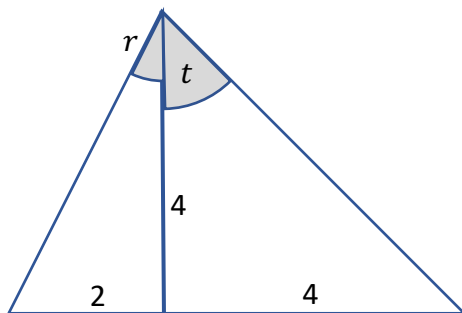
14. Trig identities

1. With reference to the right-angled triangle shown:
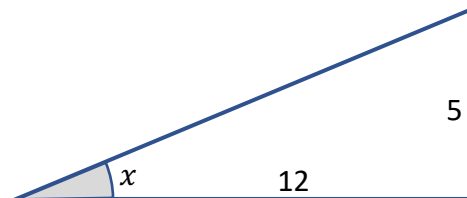

   a) Find the exact value of
      i) $\sin x$
      ii) $\sin 2x$
      iii) $\cos 2x$

   b) By considering $\sin(2x + x)$, find the exact value of $\sin 3x$.

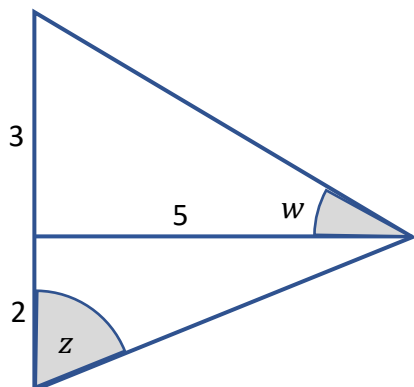2. With reference to the joined right-angled triangles shown:

   a) Find the exact values of
      i) $\sin t$
      ii) $\cos r$

   b) Find the exact values of
      i) $\sin(r + t)$
      ii) $\cos(t - r)$

3. With reference to the right-angled triangle shown:

   a) Find exact values of
      i) $\cos x$
      ii) $\cos^2 x$
      iii) $\cos 2x$

   b) Evaluate $\sin^2 x + \cos^2 x$

4. With reference to the right-angled triangles shown:

   a) Find the exact values of
      i) $\cos z$
      ii) $\sin z$

   b) Find the exact values of
      i) $\sin 2z$
      ii) $\cos(w + z)$