

# Expressing Geometric Properties Worksheet 1

1. Prove that the shape with corners  $A(4, 7)$ ,  $B(8, 5)$  and  $C(10, 10)$  is a scalene triangle.
2. Prove that the shape with corners  $A(1, 4)$ ,  $B(3, 0)$ ,  $C(1, -4)$  and  $D(-1, 0)$  is a rhombus.
3. Prove that the shape with corners  $A(10, 8)$ ,  $B(12, 7)$ ,  $C(14, 3)$  and  $D(8, 0)$  is a rectangle.
4. Prove that the shape with corners  $A(10, 8)$ ,  $B(13, 5)$  and  $C(17, 12)$  is an isosceles triangle.
5. Prove that the shape with corners  $A(-6, 4)$ ,  $B(-3, -1)$ ,  $C(0, -2)$  and  $D(-6, -8)$  is a trapezoid.
6. Prove that the shape with corners  $A(14, 11)$ ,  $B(24, 9)$ ,  $C(26, 3)$  and  $D(16, 5)$  is a parallelogram.
7. Prove that the shape with corners  $A(8, 9)$ ,  $B(13, 10)$ ,  $C(14, 5)$  and  $D(9, 4)$  is a square.
8. Prove that the point  $(4, 11)$  lies in the line  $y = 0.5x + 9$ .
9. Prove that the point  $(6, 8)$  lies on the circle with a center of  $(3, 4)$  and a radius 5.
10. Prove that the point  $(6, 8)$  lies on the ellipse  $\frac{(x-1)^2}{9} + \frac{(y-2)^2}{16} = 1$ .