1) Prove that the triangle with vertices P(-3, 1), Q(4, 2), and R(-2, -1) is a right triangle.
2) Prove that the triangle with vertices D(0, 4), E(10, 4), and F(5, 9) is an isosceles triangle.
3) Prove that the triangle with vertices D(2, 3), E(5, 5), and F(4, 0) is an isosceles, right triangle.
4) Quadrilateral ABCD has vertices A(-3, -2), B(9, 2), C(1, 6), and D(-5, 4). Using coordinate geometry, prove that quadrilateral ABCD is a trapezoid.
5) Quadrilateral MARY has vertices M(-3, 3), A(7, 3), R(3, 6), and Y(1, 6). Using coordinate geometry prove that quadrilateral MARY is an isosceles trapezoid.
6) If the vertices of quadrilateral PEAR are P(-3, 0), E(0, 4), A(5, -6), and R(-1, -4), show, using coordinate geometry, that quadrilateral PEAR is not an isosceles trapezoid.
7) The points $A(-2, 3), B(1, 5), C(2, 9),$ and $D(-1, 7)$ are the vertices of a quadrilateral. Prove that $ABCD$ is a parallelogram.
Quadrilateral $ABCD$ has vertices $A(-1, 0), B(3, 3), C(6, -1)$, and $D(2, -4)$. Prove that quadrilateral $ABCD$ is a square.
9) Quadrilateral PQRS has vertices P(0, 2), Q(4, 8), R(7, 6), and S(3, 0). Show that PQRS is a rectangle.
10) Given points (1, 2), (-4, 4), (-3, -8), and (-8, -6). Is this quadrilateral a rectangle?
11) Quadrilateral NORA has vertices N(3,2), O(7,0), R(11,2), and A(7,4). Use coordinate geometry to prove that a) quadrilateral NORA is a rhombus, and b) quadrilateral NORA is not a square.
12) Quadrilateral ABCD with vertices A(0, 0), B(a, 0), C(a, a), and D(0, a). Prove that the figure is a square.

13) Triangle ART has vertices A(a, b), R(a + c, b), and T(a + c/2, b + d). Using coordinate geometry prove that triangle ART is isosceles.