Name : _____ Score : _____

Distance Formula - Triangles

Sheet 1

1) Show that the points A(7, 5), B(2, 3) and C(6, –7) are the vertices of a right triangle.

2) Prove that the points P(4, –1), Q(5, 6) and R(1, 3) are the vertices of an isosceles triangle.

3) Show that the points D(1, 2), E(–6, 4) and F(5, –8) form a scalene triangle.

4) Show that the points J(1, 1), K(–1, –1) and L($-\sqrt{3}, \sqrt{3}$) form an equilateral triangle.

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Answer key

Distance Formula - Triangles

Sheet 1

1) Show that the points A(7, 5), B(2, 3) and C(6, –7) are the vertices of a right triangle.

$AB = \sqrt{29}$ units ; $BC = \sqrt{116}$ units ; $CA = \sqrt{145}$ units

$AB^2 = 29$ units ; $BC^2 = 116$ units ; $CA^2 = 145$ units

$AB^2 + BC^2 = CA^2$

The points A(7, 5), B(2, 3) and C(6, –7) form a right triangle.

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2) Prove that the points P(4, –1), Q(5, 6) and R(1, 3) are the vertices of an isosceles triangle.

$PQ = \sqrt{50}$ units ; $QR = \sqrt{25}$ units ; $RP = \sqrt{25}$ units

$QR = RP$

The points P(4, –1), Q(5, 6) and R(1, 3) form an isosceles triangle.

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3) Show that the points D(1, 2), E(–6, 4) and F(5, –8) form a scalene triangle.

$DE = \sqrt{53}$ units ; $EF = \sqrt{265}$ units ; $FD = \sqrt{116}$ units

$DE \neq FD \neq EF$

The points D(1, 2), E(–6, 4) and F(5, –8) form a scalene triangle.

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4) Show that the points J(1, 1), K(–1, –1) and L($-\sqrt{3}, \sqrt{3}$) form an equilateral triangle.

$JK = \sqrt{8}$ units ; $KL = \sqrt{8}$ units ; $LJ = \sqrt{8}$ units

$JK = KL = LJ$

The points J(1, 1), K(–1, –1) and L($-\sqrt{3}, \sqrt{3}$) form an equilateral triangle.
