

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.

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.

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

$$AB^2 = 29 \text{ units}; BC^2 = 116 \text{ units}; CA^2 = 145 \text{ units}$$

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

The points A(7, 5), B(2, 3) and C(6, -7) form 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.

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

$$QR = RP$$

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

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

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

$$DE \neq FD \neq EF$$

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(-√3, √3) form an equilateral triangle.

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

$$JK = KL = LJ$$

The points J(1, 1), K(-1, -1) and L(-√3, √3) form an equilateral triangle.

Distance Formula - Triangles

Sheet 2

- 1) Show that the points L(5, 0), M(1, 8) and N(6, 10) form a scalene triangle.
-

- 2) Show that the points _____ right triangle.

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- 3) Show that the points _____ triangle.

- 4) Prove that the points F(8, -1), G(9, -3) and H(7, -4) are the vertices of an isosceles triangle.
-

Distance Formula - Triangles

- 1) Show that the points L(5, 0), M(1, 8) and N(6, 10) form a scalene triangle.

$$LM = \sqrt{80} \text{ units ; } MN = \sqrt{29} \text{ units ; } NL = \sqrt{101} \text{ units}$$

$$LM \neq MN \neq NL$$

The points L(5, 0), M(1, 8) and N(6, 10) form a scalene triangle.

- 2) Show that the points S(-6, 3), T(-3, 6) and U(-3, 9) form a right triangle.

$$ST = \sqrt{9} \text{ units}$$

$$ST^2 = 9 \text{ units ;}$$

$$ST^2 + US^2 = TU^2$$

The points S(-6

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- 3) Show that the points X(-2, 1), Y(2, 5) and Z(6, 5) form a right triangle.

$$XY = \sqrt{32} \text{ units}$$

$$XY = YZ = ZX$$

The points X(-2

- 4) Prove that the points F(8, -1), G(9, -3) and H(7, -4) are the vertices of an isosceles triangle.

$$FG = \sqrt{5} \text{ units ; } GH = \sqrt{5} \text{ units ; } HF = \sqrt{10} \text{ units}$$

$$FG = GH$$

The points F(8, -1), G(9, -3) and H(7, -4) form an isosceles triangle.

Distance Formula - Triangles

Sheet 3

- 1) Prove that the points $U(-7, 3)$, $V(-5, 3)$ and $W(-6, 5)$ are the vertices of an isosceles triangle.
-

- 2) Show that the points _____ al triangle.

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- 3) Show that the points _____ t triangle.

- 4) Show that the points $R(1, -9)$, $S(1, -6)$ and $T(5, -9)$ form a scalene triangle.
-

Distance Formula - Triangles

- 1) Prove that the points $U(-7, 3)$, $V(-5, 3)$ and $W(-6, 5)$ are the vertices of an isosceles triangle.

$$UV = \sqrt{4} \text{ units} ; VW = \sqrt{5} \text{ units} ; WU = \sqrt{5} \text{ units}$$

$$VW = WU$$

The points $U(-7, 3)$, $V(-5, 3)$ and $W(-6, 5)$ form an isosceles triangle.

- 2) Show that the points _____ al triangle.

$$AB = \sqrt{128} \text{ uni}$$

$$AB = BC = CA$$

The points $A(-4$ _____ al triangle.

- 3) Show that the points _____ t triangle.

$$EF = \sqrt{16} \text{ units}$$

$$EF^2 = 16 \text{ units}$$

$$FG^2 + GE^2 = EF^2$$

The points $E(8,$ _____

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- 4) Show that the points $R(1, -9)$, $S(1, -6)$ and $T(5, -9)$ form a scalene triangle.

$$RS = \sqrt{9} \text{ units} ; ST = \sqrt{25} \text{ units} ; TR = \sqrt{16} \text{ units}$$

$$RS = 3 \text{ units} ; ST = 5 \text{ units} ; TR = 4 \text{ units}$$

$$RS \neq TR \neq ST$$

The points $R(1, -9)$, $S(1, -6)$ and $T(5, -9)$ form a scalene triangle.
