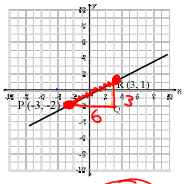
3.1 Length of a Line Segment

Investigate Pg. 146 1-5

Calculate the length of line segment RP



$6^2 + 3^2 = c^2$
$36 + 9 = c^2$
$c = \sqrt{45}$

$PQ = (1 - (-2))$ or $(y_2 - y_1)$ 3

$QR = (3 - (-3))$ or $(x_2 - x_1)$ 6

$RP^2 = PQ^2 + QR^2$

Distance Formula

$d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

$P(-3, -2)$ $R(3, 1)$
$x_1\ y_1$ $x_2\ y_2$

$d = \sqrt{(1-(-2))^2 + (3-(-3))^2}$

$d = \sqrt{(3)^2 + (6)^2}$

$d = \sqrt{((3)^2 + (6)^2)}$

$d = \sqrt{45} = 6.71$ units

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The points A(-2,5) B(3,2) and C(1,0) are the vertices of triangle ABC. Calculate the length of all 3 sides and classify the triangle.

AB: $A(-2,5)$ $B(3,2)$
$x_1\ y_1$ $x_2\ y_2$

$d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

$d = \sqrt{(2-5)^2 + (3-(-2))^2}$

$d = \sqrt{(-3)^2 + (5)^2}$

$d = \sqrt{9 + 25}$

$d = \sqrt{34}$

$\overline{BC}$ $B(3,2)$ $C(1,0)$
$x_1\ y_1$ $x_2\ y_2$

$d = \sqrt{(0-2)^2 + (1-3)^2}$

$d = \sqrt{4 + 4}$

$\sqrt{4 \cdot 2}$

$d = \sqrt{8} = 2\sqrt{2}$

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Assignment: Pg. 149
5 odds, 8a, 11, 14a-c, 19

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