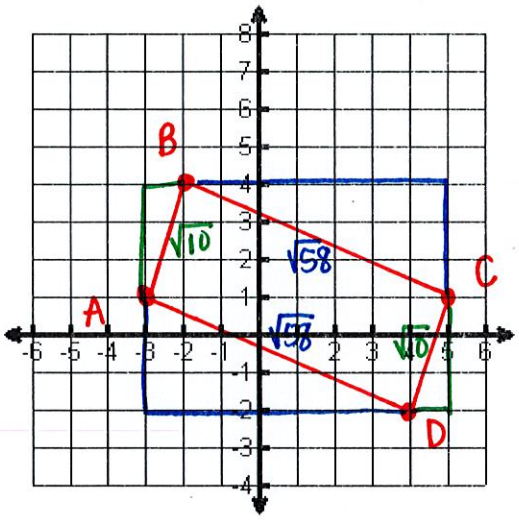
Name: _____ Date: _____

UNIT 7 TEST REVIEW

Example 1:

Plot and label each point.

A(-3, 1), B(-2, 4), C(5, 1), and D(4, -2)



1a: **A parallelogram has opposite sides parallel.**

Using the definition above, prove ABCD is a **parallelogram.** Should you use **slope** or **distance**?

slope:

AB = 3/1 = 3 CD = 3/1 = 3

BC = -3/7 AD = -3/7

* opposite sides have the same slope ✓

1b: **A parallelogram has opposite sides congruent.**

Using the definition above, prove that ABCD is a **parallelogram.** Should you use **slope** or **distance**?

distance:

AB = $\sqrt{10}$ CD = $\sqrt{10}$

BC = $\sqrt{58}$ AD = $\sqrt{58}$

Is ABCD a parallelogram?

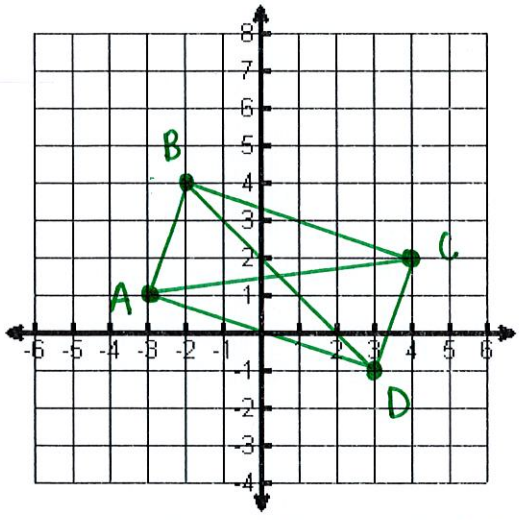
YES | **NO**

ABCD is a parallelogram because opposite sides are parallel and congruent.

Example 2:

Plot and label each point.

A(-3, 1), B(-2, 4), C(4, 2), and D(3, -1)



2a: **A rectangle has four right angles.**

Using the definition above, prove ABCD is a **rectangle.**

Should you use **slope** or **distance**?

slope:

AB = 3/1 = 3 CD = 3/1 = 3

BC = -2/6 = -1/3 AD = -2/6 = -1/3

* consecutive sides have opposite reciprocal slopes ✓

2b: **A rectangle has congruent diagonals.**

Using the definition above, prove ABCD is a **rectangle.**

Should you use **slope** or **distance**?

AC = $\sqrt{(4-(-3))^2+(2-1)^2}$ = $\sqrt{50}$ = $5\sqrt{2}$ ≈ 7.07

BD = $\sqrt{(3-(-2))^2+(-1-4)^2}$ = $\sqrt{50}$ = $5\sqrt{2}$ ≈ 7.07

Is ABCD a rectangle?

YES | **NO**

ABCD is a rectangle because it has 4 right angles and congruent diagonals.

Decide whether Point A is INSIDE, OUTSIDE, or ON the circle .

	LENGTH OF CP (RADIUS)	LENGTH OF CA	IN/OUT/ON
P(−6,2) C(4,−3) A(−3,2)	$d=\sqrt{(-6-4)^2+(2-(-3))^2}$ $=\sqrt{(-10)^2+(5)^2}$ $=\sqrt{125}$ $=5\sqrt{5}$ ≈ 11.18	$d=\sqrt{(-3-4)^2+(2-(-3))^2}$ $=\sqrt{(-7)^2+(5)^2}$ $=\sqrt{74}$ ≈ 8.60	IN
P(6,3) C(3,−1) A(−1,−4)	$d=\sqrt{(6-3)^2+(3-(-1))^2}$ $=\sqrt{(3)^2+(4)^2}$ $=\sqrt{25}$ $=5$	$d=\sqrt{(-1-3)^2+(-4-(-1))^2}$ $=\sqrt{(-4)^2+(-3)^2}$ $=\sqrt{25}$ $=5$	ON
P(−3,4) C(−5,7) A(−6,1)	$d=\sqrt{(-3-(-5))^2+(4-7)^2}$ $=\sqrt{(2)^2+(-3)^2}$ $=\sqrt{13}$ ≈ 3.61	$d=\sqrt{(-6-(-5))^2+(1-7)^2}$ $=\sqrt{(-1)^2+(-6)^2}$ $=\sqrt{37}$ ≈ 6.08	OUT
P(−3,0) C(2,3) A(3,−4)	$d=\sqrt{(-3-2)^2+(0-3)^2}$ $=\sqrt{(-5)^2+(-3)^2}$ $=\sqrt{34}$ ≈ 5.83	$d=\sqrt{(3-2)^2+(-4-3)^2}$ $=\sqrt{(1)^2+(-7)^2}$ $=\sqrt{50}$ $=5\sqrt{2}$ ≈ 7.07	OUT
P(−2,−1) C(−5,2) A(−9,6)	$d=\sqrt{(-2-(-5))^2+(-1-2)^2}$ $=\sqrt{(3)^2+(-3)^2}$ $=\sqrt{18}$ $=3\sqrt{2}$ ≈ 4.24	$d=\sqrt{(-9-(-5))^2+(6-2)^2}$ $=\sqrt{(-4)^2+(4)^2}$ $=\sqrt{32}$ $=4\sqrt{2}$ ≈ 5.66	OUT