DISTANCE FORMULA

AGENDA

Warm-Up

Notes

HW: Practice (1 page)

18 SCHOOL DAYS LEFT!!

WARM-UP

Read the "Learning Agreement". Print your name clearly, then sign that you understand the consequences.

ALGEBRA 1 LEARNING AGREEMENT

I, _____,
understand that we will still be learning in this class and that this year is not over until June 5th. I know that is still possible to not pass this class and therefore not receive credit for one or both semesters of algebra 1.

DISTANCE FORMULA

Make your "Getting Ready for Geometry" book. The green page goes on the outside. Write your name on your book RIGHT NOW.

Name: _____

Getting Ready for Geometry

Algebra 1 After EOC

DISTANCE FORMULA

1. Find the distance between the points (2, 5) and (6, 2) using the Pythagorean Theorem.
HINT: Plot the points!

AB → distance btw A & B

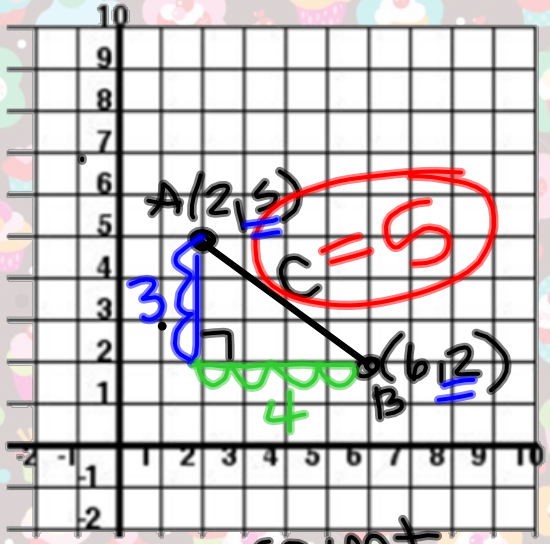
$a^2+b^2=c^2$

$3^2+4^2=c^2$

$9+16=c^2$

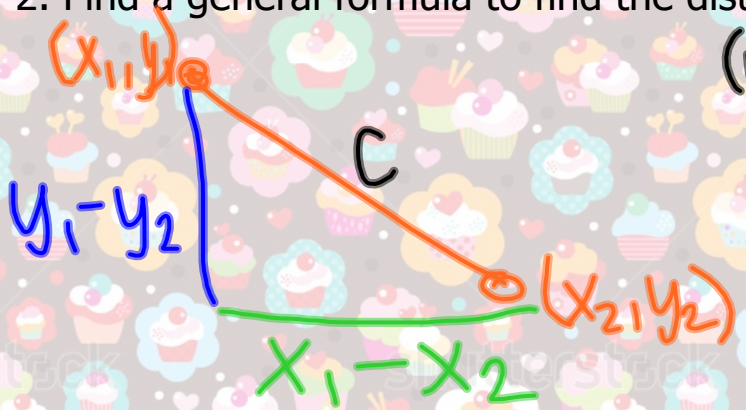
$\sqrt{25}=\sqrt{c^2}$

$5=c$



* Vertical & horizontal distance → count gridlines

2. Find a general formula to find the distance between 2 points (x_1, y_1) (x_2, y_2)



$(y_1-y_2)^2+(x_1-x_2)^2=c^2$

DISTANCE FORMULA

Distance Formula

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

LABEL YOUR POINTS

3. Find the distance between the points (-5, 3) and (2, -1).

$x_1\ y_1 \quad x_2\ y_2$

$d = \sqrt{(2+5)^2 + (-1-3)^2}$

$= \sqrt{7^2 + (-4)^2}$

$= \sqrt{49 + 16} = \sqrt{65} \approx 8.1$

4. Find the distance between the points (5, 2) and (4, 3).

$x_1 y_1 \quad x_2 y_2$

$d = \sqrt{(4-5)^2 + (3-2)^2}$

$= \sqrt{(-1)^2 + 1^2} = \sqrt{1+1} = \sqrt{2} \approx 1.4$

DISTANCE FORMULA

LABEL & Plug in what you know

5 The distance between (6, -3) and (a, 4) is 11.31. Find a.

$(11.31)^2 = (\sqrt{(a-6)^2+(4-(-3))^2})^2$ $x_1\ y_1$ $x_2\ y_2$ d

get rid of $\sqrt{}$ $\Leftrightarrow$ ^{2}

$128 = (a-6)^2 + 49$

$-49 \quad -49$

$\sqrt{79} = \sqrt{(a-6)^2}$

$(a-6)(a-6)$

$\sqrt{79} = a-6$

$8.9 = a-6$

$+6 \quad +6$

14.9

6. If the distance between the points (4, x) and (-2, 6) is 10.82, find x.

$(10.82)^2 = (\sqrt{(-2-4)^2+(6-x)^2})^2$ x_1y_1 x_2y_2 d

$117.1 = 36 + (6-x)^2$

$-36 \quad -36$

$\sqrt{81.1} = \sqrt{(6-x)^2}$

$9 = 6-x$

$x = -3$

7. Charlie lives 4 miles away from school. If he uses a coordinate plane as a map and each unit represents a mile, which of the following points would be the location of the school if his house is at a point (4, -3)?

A. (-4, 3)
B. (0, 0)
C. (1, 4)
D. (4, 1)

too far ?

Algebra I Getting Ready for Geometry

Practice – Distance Formula

Name _____ **Period** _____ **Date** _____

Find the distance between the given points.

1. (-2, -4) and (3, 8)

2. (5, 0) and (0, -5)

3. (*a*, *b*) and (0,0)

4. (*a*, *b*) and (-1, 5)

Use the grid to the right to answer questions 5-8.

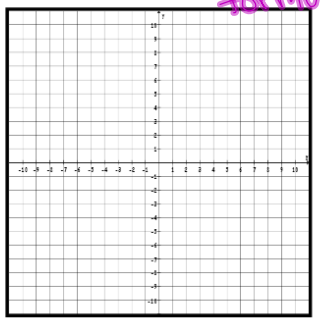
5. Plot the points *A* (-2, 1), *B* (1, -2), *C* (4, 1), and *D* (1, 4)

6. Find *AD*, *CD*, and *AC*.

AD = _____

CD = _____

AC = _____



7. A doubles tennis court is a rectangle 36 feet wide and 78 feet long. If two players are standing in diagonally opposite corners, about how far apart are they to the nearest tenth of a foot?