"⊥" = perpendicular

Math 4 Pre-Calculus
Summer 2010

Quiz 5

Name ANSWERS
Date

Write an algebraic equation to solve the problem. Define variable with words. Write answer in sentence. 2 POINTS

1. Trent can deliver his newspaper in 30 minutes. It takes Lois 20 minutes to do the same route. How long would it take them to deliver the newspapers if they work together?

pg. 147, #33
Lecture 3, Part 3

x = time working together.

$$\frac{1}{20} + \frac{1}{30} = \frac{1}{x}$$

$$\frac{30+20}{600} = \frac{1}{x}$$

$$\frac{50}{600} = \frac{1}{x}$$

$$12 = x$$

12 minutes, working together

☐ more work on back

Plot each point and form the triangle ABC. Verify it is a right triangle as we did in class. Find it's area. 2 POINTS

2. $A=(-5,3)$, $B=(6,0)$, and $C=(5,5)$

pg. 161, #31
Lecture 4, Part 1

one way

slope from A to B = $\frac{2}{10}$

$-\frac{1}{\text{slope from B to C}} = -\frac{1}{-5/1}$ ✓ ⇒ perpendicular

another way

$d(A,C) = \sqrt{10^2+2^2} = \sqrt{104}$

$d(B,C) = \sqrt{1^2+5^2} = \sqrt{26}$

$d(A,B) = \sqrt{3^2+11^2} = \sqrt{9+121} = \sqrt{130}$

$(\sqrt{104})^2 + (\sqrt{26})^2 = (\sqrt{130})^2$

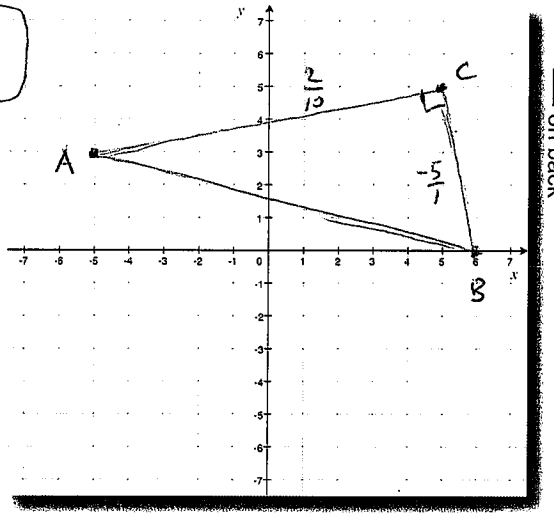
$130 = 130$ ✓

$A = \frac{1}{2}b\cdot h$

$= \frac{1}{2}\sqrt{104}\sqrt{26}$

$= \frac{1}{2}(52)$

$= 26$



☐ more work on back

Find the equation of the line with the given properties. Show all work. 2 POINTS

3. Perpendicular to the line $2x+y=2$ and containing the point $(-5,3)$

NOTE: NOT LIKE PLAYER

pg. 186, #67
Lecture 4, Part 2

$y = -2x + 2$

$m = -2$ so $\perp$ $m = +\frac{1}{2}$

POINT-SLOPE FORM:

$y - 3 = \frac{1}{2}(x+5)$

$2y - 6 = x + 5$

$-x + 2y = 11$ or

or

$2y = x + 11$

$y = \frac{1}{2}x + \frac{11}{2}$

☐ more work on back

Find the center and radius of the circle having the following equation. Show all work.

4. $2x^2+2y^2-12x+8y-24=0$

2 POINTS

pg. 316, #~~12~~ 31
Lecture 4, Part 3

$x^2+y^2-6x+4y-12=0$

$x^2-6x+9 + y^2+4y+4 = 12+9+4$

$(x-3)^2 + (x+2)^2 = 25$

5^2

center = $(3,-2)$, radius = 5

☐ more work on back