

9/14/Precalc

Quiz 5

avg 90
med 100

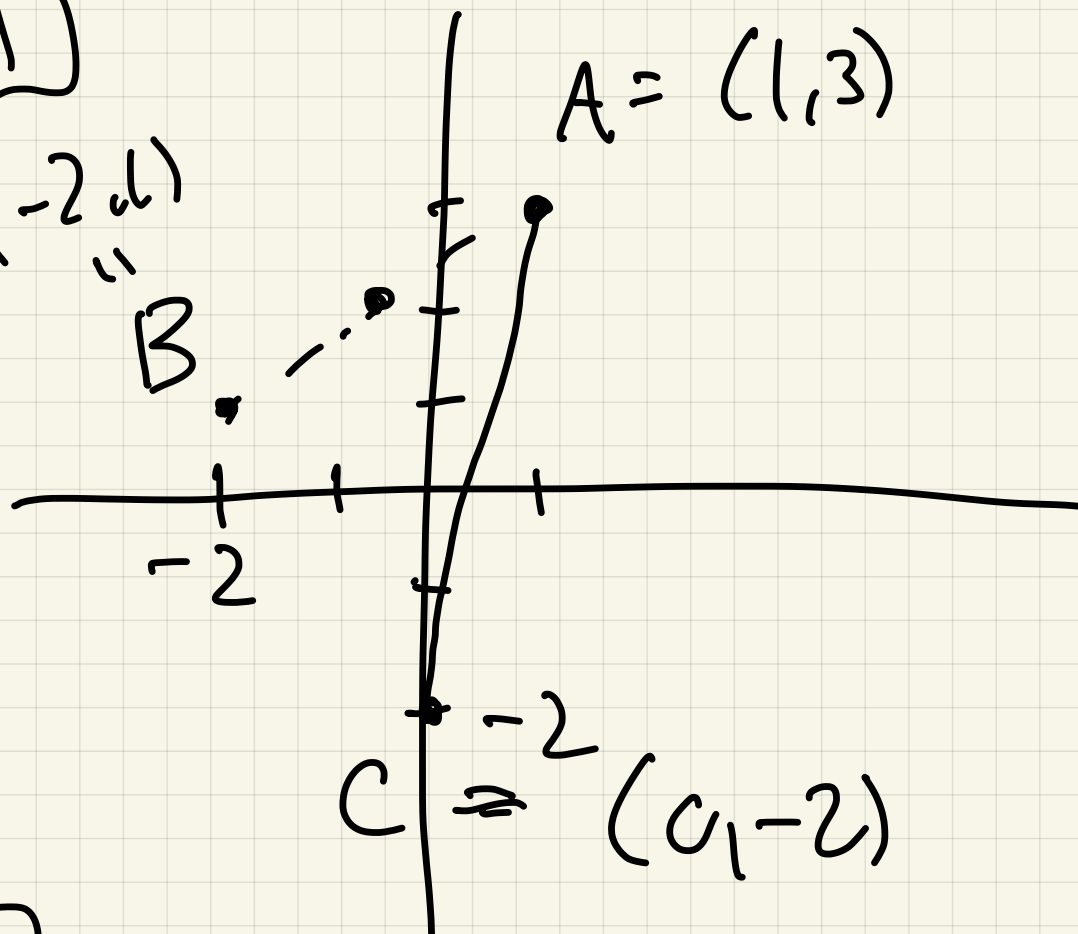
1

$(-2, 1)$

B

$A = (1, 3)$

$A = (1, 3)$



$C = (0, -2)$

2

$$\begin{aligned} \overline{AC} &= \sqrt{(0-1)^2 + (-2-3)^2} \\ &= \sqrt{1 + 25} = \sqrt{26} \end{aligned}$$

3

$$\begin{aligned} \overline{AB} &= \sqrt{(-2-1)^2 + (1-3)^2} \\ &= \sqrt{9 + 4} = \sqrt{13} \\ \overline{BC} &= \sqrt{(-2-0)^2 + (1-(-2))^2} \end{aligned}$$

$$= \sqrt{4 + 9} = \sqrt{13}$$

$$\underline{13} + \underline{13} = 26 \rightarrow \text{ABC right triangle}$$

$$M = \left(\frac{-2+1}{2}, \frac{1+3}{2} \right) = \left(-\frac{1}{2}, 2 \right)$$

Last time 1.1 graphs of equations

1.2 linear equations

$$\rightarrow ax + b = 0, a \neq 0$$

• Mostly easy:

Ex (a) $2x + 1 = 18 \Rightarrow 2x = 17$
 $2x - 17 = 0$ $x = \frac{17}{2}$

$$(b) \quad 2(x+1)-4=2x+1$$

$$~~2x+2-4=2x+1~~$$

$$-2=1$$

No solution !!

$$(c) \quad 3(x+2)-1=3x+5$$

$$~~3x+6-1=3x+5~~$$

$$0=0$$

all x in reals are
solutions

Ex 2 Find the x/y
intercepts for equation

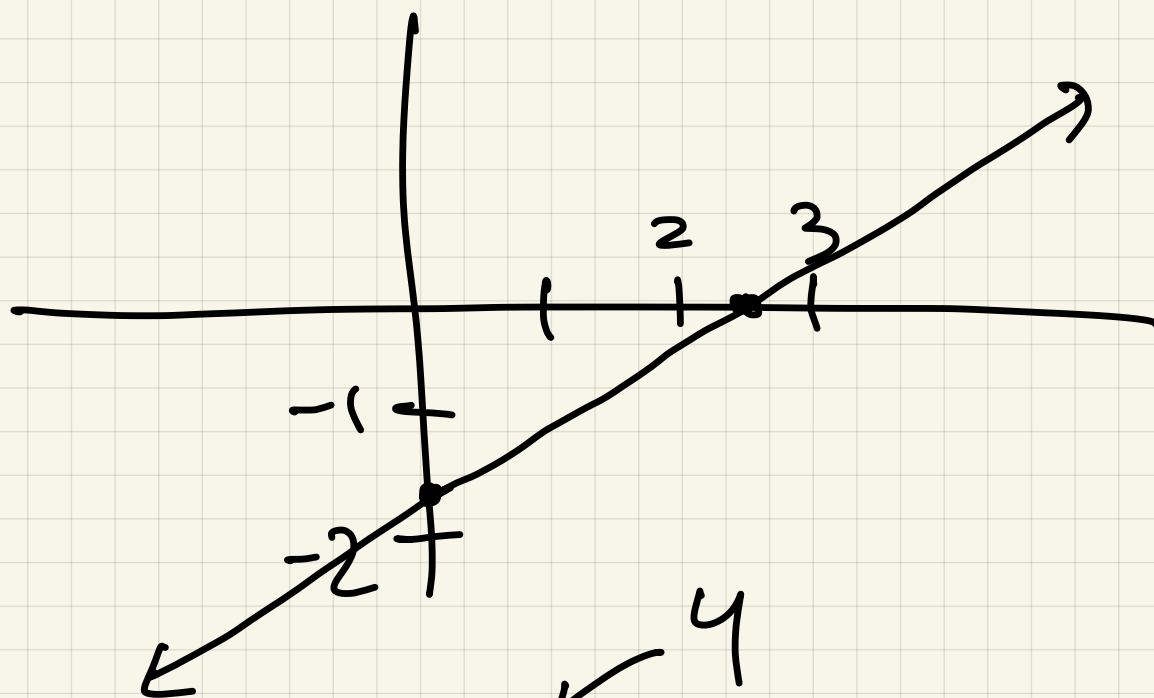
$$2x-3y=5$$

x -int Set $y=0$,

$$\uparrow 2x = 5 \Rightarrow x = 5/2$$
$$(5/2, 0)$$

y-intercept : set $x = 0$

$$-3y = 5 \Rightarrow y = -5/3$$
$$(0, -5/3)$$



1.4 Quadratic equations 4

↳ Has form

$$ax^2 + bx + c = 0, a \neq 0$$

Solving quadratic equations

(A) If $b=0$, it's easy:

~~Ex~~ (a) $3x^2 - 7 = 0 \Rightarrow$

$$x^2 = \frac{7}{3} \Rightarrow x = \pm \sqrt{\frac{7}{3}}$$

(b) $2x^2 + 5 = 0 \Rightarrow$

$$x^2 = -5/2$$

no (real)
solution

(B) If you can factor, it's easy

Ex (a) $x^2 - \underline{2}x - \underline{8} = 0$

$$(x-4)(x+2) = 0$$

$$x = 4, -2$$

$$(b) \quad x^2 - 9 = 0$$

$$(x-3)(x+3) = 0$$

$$x = 3, -3$$

(c)

$$x^2 - 5x - 6 = 0$$

$$(x-6)(x+1) = 0$$

$$x = 6, -1$$

$$(d) \quad 3x^2 - x - 2 = 0$$

$$(3x+A)(x+B)$$

A	B
2	-1
-1	2
-2	1
1	-2

$$\longrightarrow AB = -2$$

$$3B+A = -1$$

$$(3x+2)(x-1) = 0$$

$$x = 1, -2/3$$

$$3x+2 = 0 \Rightarrow 3x = -2$$

$$x = -2/3$$

$$\textcircled{C} \quad (e) \quad x^2 - 2x - 9 = 0$$

$$x^2 - 2x = 9$$

$$\underline{x^2 - 2x + 1 = 9 + 1 = 10}$$

$$(x-1)^2 = 10$$

$$x-1 = \pm \sqrt{10}$$

$$\boxed{x = 1 \pm \sqrt{10}}$$