HW P-1 Fr Chris

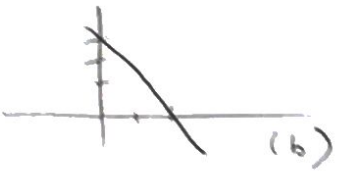
Read P.1, P.2, 1.2 ✓

P.1 (p. 8) 3-6, 21, 22, 25, 35, 53, 59

P.2 (p16) 16 22 23 43 47 53, 55 59

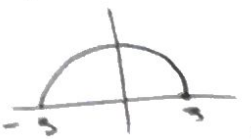
p.8 (P1)
Match (graph

③ $y = \frac{-3}{2} + 3$
line: (2,0) to (0,3)



(b)

④ $y = \sqrt{9 - x^2}$
top of circle $r = 3^2$



(d)

⑤ $y = 3 - x^2$
parabola, down
vertex (0,3)

(a)

⑥ $y = x^3 - x$
cubic
$y = x(x^2 - 1)$
$y = x(x-1)(x+1)$
zeros at 0, +1, -1

(c)

Find Intercepts

(21) $y = x^2 + x - 2$
$y = (x - 1)(x + 2)$
int. are (1,0), (-2,0)
(0,-2)

(22) $y^2 = x^3 - 4x$
$y^2 = x(x^2 - 4)$
$y^2 = x(x-2)(x+2)$
into are (0,0), (2,0), (-2,0)

P.1 (23) $y = \frac{2-\sqrt{x}}{5x+1}$ when $x=0$: $y = \frac{2-0}{0+1} = 2$ $(0,2)$

when $y=0$: $2-\sqrt{x}=0$, $2=\sqrt{x}$, $x=4$ $(4,0)$

Test for sym: (See 31 @ CurveVisa.com) video

(33) $y = 4-\sqrt{x+3}$

If x were $-x$: $y = 4-\sqrt{(-x)+3} \neq 4-\sqrt{x+3}$ not sym to y axis

If y were $-y$: $-y = 4-\sqrt{x+3}$ $(\neq y)$ not sym. to x axis

If $x \to -x$, $y \to -x$ then $-y = 4-\sqrt{3-x} \neq y$ not sym to origin.

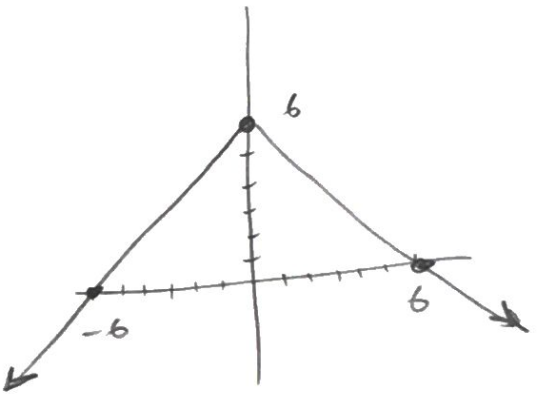
Confirm w/ calculator: $Y_1 = 4-\sqrt{(x+3)}$

(53) Sketch using intercepts & Graph

$y = 6-|x|$

ints: $(0,6)$, $(6,0)$, $(-6,0)$

$6-|-x| = 6-|x| = y$ so sym to y axis



(59) Find intersection

$x^2+y=15$ and $-3x+y=11$

$\to y = 3x+11$

$\to x^2+3x+11=15$

$x^2+3x-4=0$

$(x-1)(x+4)=0$

If $x=1$, $y = 3(1)+11 = 14$ $(1,14)$

If $x=-4$, $y = 3(-4)+11 = -1$ $(-4,-1)$

HW P-2 Fr Chris

(p16) 16, 22, 23, 43, 47, 53, 55, 59,

(16) Find 3 points on m is undefined going through (-4, 3):

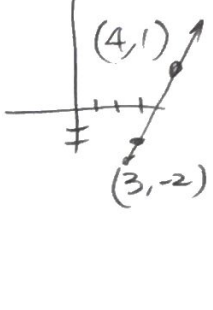
vertical line; (-4, 3),
(-4, 0),
(-4, 107), etc

(22) Eq of line through (0, 4), m = 0

$y = 4$

(23) Line through (3, -2) $m = 3$

$y + 2 = 3(x - 3)$



(43) Line through (4, 3) and (0, -5)

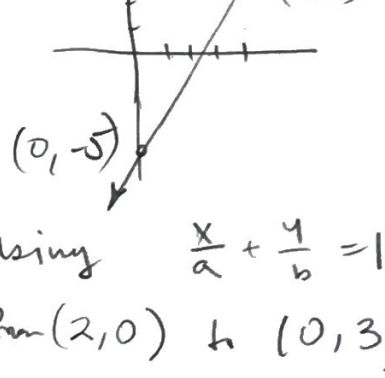
$$m = \frac{3-(-5)}{4-0} = 2$$

$y - 3 = 2(x - 4)$ or

$y + 5 = 2(x - 0)$ or

$y = 2x - 5$ or

$2x - y = 5$



(53) Using $\frac{x}{a} + \frac{y}{b} = 1$ for line through (a, 0) to (0, b)

line from (2, 0) to (0, 3), $a = 2$ $b = 3$ So $\frac{x}{2} + \frac{y}{3} = 1$

$3x + y = -2$

$3x + y + 2 = 0$

(p 16 P-2)

(55) Since $\frac{x}{a} + \frac{y}{b} = 1$ if $(a,0)$ and $(0,b)$ are on the line:

Considering $(9,-2)$, $(2a,0)$ and $(0,a)$ are on the line $(a \neq 0)$ we have

$$b = a$$

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

$$x + 2y = 2a$$

Using $(9,-2)$: $9 + (2)(-2) = 2a$

$$a = \frac{5}{2}$$

$$\frac{x}{2\left(\frac{5}{2}\right)} + \frac{y}{\frac{5}{2}} = 1$$

$$\frac{x}{5} + \frac{2y}{5} = 1$$

$$x + 2y = 5$$

$$x + 2y - 5 = 0$$

(59) $(-3,2)$ $\quad x + y = 7 \quad m = -1 \quad m_{\perp} = +1$

parallel: $y - 2 = -1(x+3)$

$$x + y + 1 = 0$$

$\perp$: $\quad y - 2 = x + 3$

$$-x + y - 5 = 0$$

$$x - y + 5 = 0$$