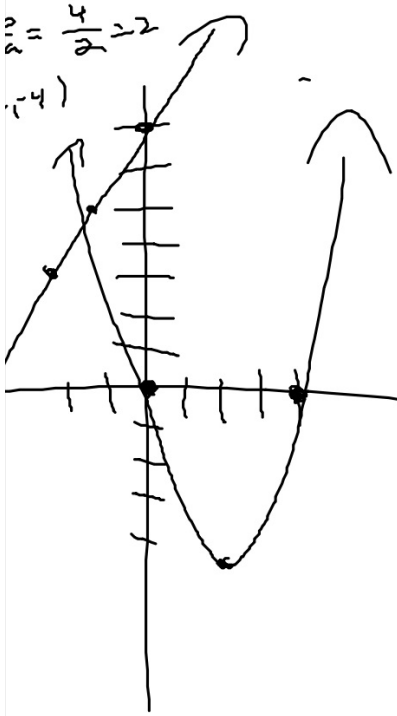
9. (31
95) Solve graphically.

$-4) = x^2 - 4x = 2x + 7$

$\frac{-b}{2a} = \frac{4}{2} = 2$

$(2, -4)$



$x = -1$

$x = 7$

g.155. Find the domain.

45) $f(x) = \sqrt{x-5}$

$x - 5 \geq 0$

$x \geq 5$

$\therefore D: [5, \infty)$

ex.

37) $f(x) = 2^x$

D: $(-\infty, \infty)$

p. 131
63) $\frac{\sqrt{6}}{\sqrt{3}+\sqrt{2}}$ (rationalize the denominator)

$$\frac{\sqrt{6}}{\sqrt{3}+\sqrt{2}} \cdot \frac{(\sqrt{3}-\sqrt{2})}{\sqrt{3}-\sqrt{2}} = \frac{\sqrt{18}-\sqrt{12}}{3-2}$$

$$= \sqrt{18}-\sqrt{12}$$

$$= \sqrt{9}\sqrt{2}-\sqrt{4}\sqrt{3}$$

$$= 3\sqrt{2}-2\sqrt{3}$$

$(a+b)(a-b)$
$= a^2-b$

109) Determine whether the equation represents a circle, poi
or no graph. If it's a circle find center & radius.

$x^2 + y^2 + 72 = 12x$

$x^2 - 12x + y^2 = -72$

$x^2 - 12x + 36 + (y+0)^2 = -72 + 36$

$-(x-6)^2 + (y+0)^2 = +36$

NOT a circle

Std.

$(x-h)^2 +$

$r =$

Center

77) $\frac{(x+2)x}{(x+2)x-2} + \frac{1(x-2)}{x+2(x-2)} = \frac{8}{x^2-4}$

$$\frac{x^2+2x+x-2}{(x+2)(x-2)} = \frac{8}{x^2-4}$$

$$= \frac{x^2+3x-2}{x^2-4} = \frac{8}{x^2-4}$$

$x^2+3x-2 = 8$

$x^2+3x-10 = 0$

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

$x = \cancel{2}, -5$

g 131

#11) $2^{-3} - 3^{-2} = \frac{1}{2^3} - \frac{1}{3^2} = \frac{1}{8} - \frac{1}{9} = \frac{1 \cdot 9}{8 \cdot 9} - \frac{1 \cdot 8}{9 \cdot 8}$

$= \frac{2^{-3}}{3^{-2}}$

$= \frac{9}{72} - \frac{8}{72}$

$= \boxed{\frac{1}{72}}$

Pg. 155

11) $f(x) = 2(x-1)^2$

x	$f(x)$
-1	8
0	2
1	0
2	2
3	8

13) $f(x) = 2x+1$,

$f(1), f(-2), f(\frac{1}{2}), f(a), f(-a), f$

$f(1) = 2(1)+1 = 3$

$f(-2) = 2(-2)+1 = -3$

$f(\frac{1}{2}) = 2(\frac{1}{2})+1 = 2$

$f(a) = 2a+1$

$f(-a) = 2(-a)+1 = -2a+1$

$f(a+b) = 2(a+b)+1 = 2a+2b+1$

pg. 131

123) Find eq of the line passing through the points $(-1, -6), (2, -4)$.

Slope $= m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{y_1 - y_2}{x_1 - x_2} = \frac{-6 - -4}{-1 - 2} = \frac{+2}{+3} \rightarrow (2,$

$y - y_1 = m(x - x_1)$

$y + 6 = 2/3(x + 1)$

pg. 131

25) $\left(\frac{9x^3y}{y^{-3}}\right)^{1/2} = (9x^3y^4)^{1/2} = \boxed{3x^{3/2}y^2}$.

29) Write 78,250,000,000 in scientific notat

$= \boxed{7.825 \times 10^{10}}$.

43) $x^{-1/2} - 2x^{1/2} + x^{3/2}$

$= \frac{1}{x^{1/2}} - \frac{2x^{1/2}}{1} + \frac{x^{3/2}}{1}$

$= \frac{1 - 2x^{2/2} + x^{4/2}}{x^{1/2}}$

$= \frac{1 - 2x + x^2}{x^{1/2}}$

$= \frac{(x-1)(x-1)}{x^{1/2}}$

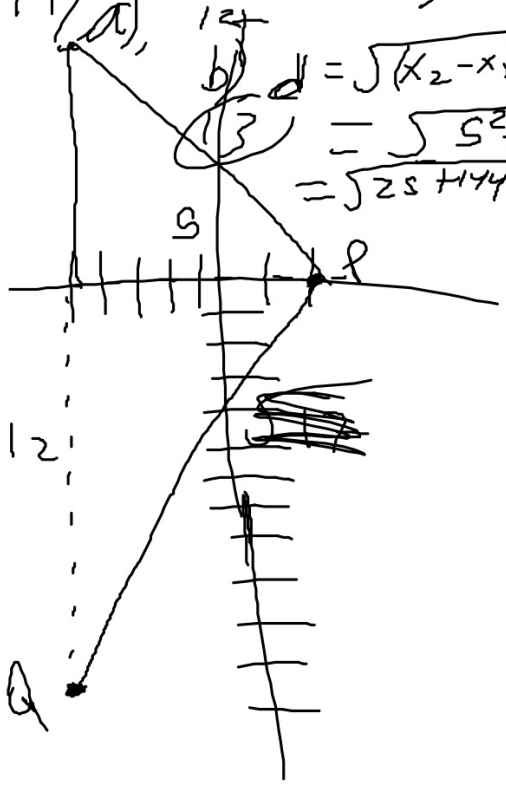
$3/2 + 1/2 =$

-1

$x^2 - 2x + 1$

99) P(2, 0), Q(−5, 12)

a)



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

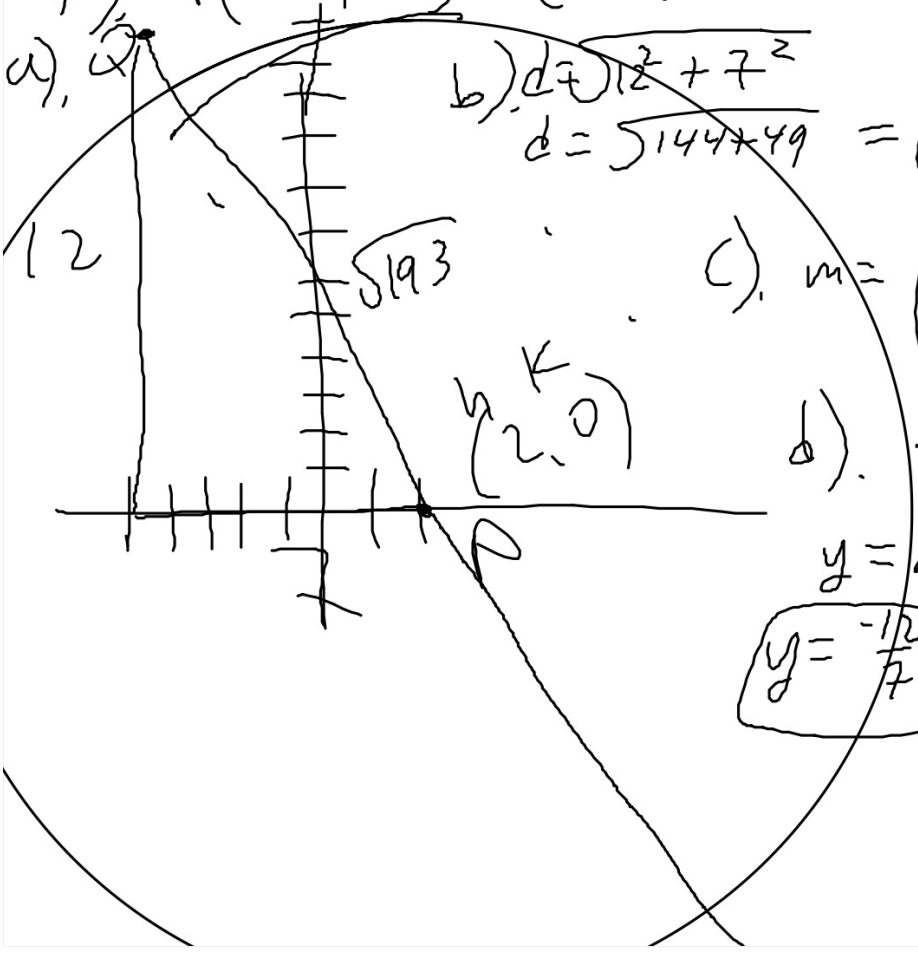
$= \sqrt{5^2 + 12^2}$

$= \sqrt{25 + 144} = \sqrt{169} = 13$

c) $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) =$

99) P(2, 0) Q(−5, 12)

a).



b). $d = \sqrt{12^2 + 7^2}$

$d = \sqrt{144 + 49} = \boxed{\sqrt{193}}$

c). $m = \left(\frac{2+-5}{2}, \frac{0+12}{2}\right) = \left(-\frac{3}{2}\right.$

d). $m = \frac{\text{rise}}{\text{run}} = -\frac{12}{7}$

$y = mx + b \Rightarrow 0 = \frac{-12}{7}(2) +$

$0 = \frac{-24}{7} + b$

$\frac{24}{7} = b$

$\boxed{y = \frac{-12}{7}x + \frac{24}{7}}$

e). $(x-h)^2 + (y-k$

$\boxed{(x-2)^2 + (y-0}$

103) $A(4,4)$ $B(5,3)$ $C(-1,-3)$

Which is closer to C, A or B?

$25+49$.

$\overline{AC} = \sqrt{(4-(-1))^2+(4-(-3))^2} = \sqrt{5^2+7^2} = \sqrt{74}$

$\overline{BC} = \sqrt{(5-(-1))^2+(3-(-3))^2} = \sqrt{6^2+6^2} = \boxed{\sqrt{72}}$

11). $f(x) = 2(x-1)^2$

x	$f(x)$
-1	8
0	2
1	0
2	2
3	8

Symmetr

13). $f(x) = 2x + 1$; $f(1), f(-2), f(a), f(a+b), f(-a)$.

$f(1) = 2(1) + 1 = 3$

$f(-2) = 2(-2) + 1 = -3$

$f(a) = 2a + 1$

$f(a+b) = 2(a+b) + 1 = 2a + 2b + 1$

$f(-a) = 2(-a) + 1 = -2a + 1$

117) $x = 5y$ ← input Test for sym. Sketch grap

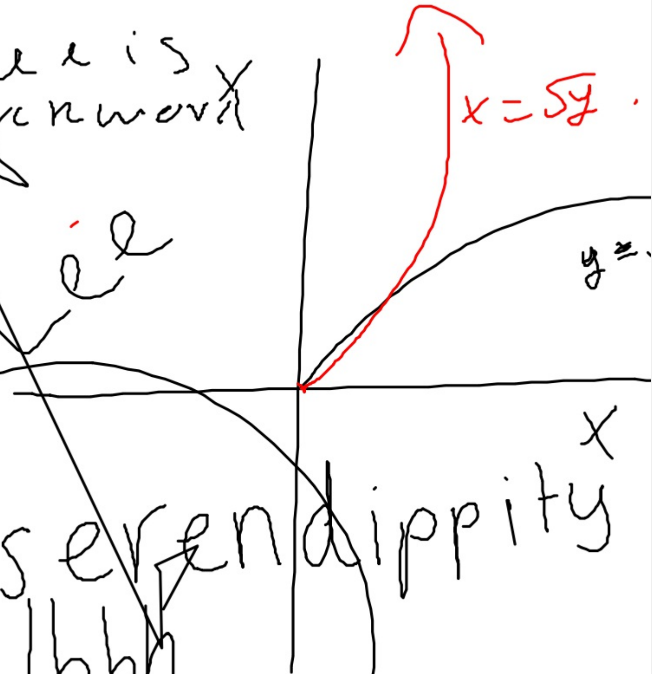
$y = 5x$

$y = 1, x = 1$

$y = -1, x = -1$?

Not sym.

Mr. lee is live backword



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