

October 6, 2015
 $(2, -5)$ & $(-6, \frac{2}{3})$

① $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{(-5) - (\frac{2}{3})}{(2) - (-6)}$
 $= \frac{-5 - \frac{2}{3}}{8} = \frac{-\frac{15}{3} - \frac{2}{3}}{8} = \frac{-\frac{17}{3}}{8} = -\frac{17}{24}$

② a. $y = mx + b$
 $-5 = -\frac{17}{24}(\frac{2}{3}) + b$
 $-5 = -\frac{34}{36} + b$
 $-\frac{180}{36} + \frac{34}{36} = b$
 $-\frac{146}{36} = b$
 $-\frac{73}{18} = b$

$y - y_1 = m(x - x_1)$
 $y - (-5) = -\frac{17}{24}(x - 2)$
 $y + 5 = -\frac{17}{24}(x - 2)$
 $24(y + 5) = -17(x - 2)$
 $24y + 120 = -17x + 34$
 $24y = -17x - 86$
 $y = -\frac{17}{24}x - \frac{86}{24}$
 $y = -\frac{17}{24}x - \frac{43}{12}$

Oct 6-8:03 AM

$(\frac{3}{2}, -\frac{5}{2})$ & $(-\frac{3}{2}, \frac{2}{2})$

① Mid-point
 $(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2})$
 $(\frac{\frac{3}{2} + (-\frac{3}{2})}{2}, \frac{-\frac{5}{2} + \frac{2}{2}}{2})$
 $(\frac{-6 + 3}{2}, \frac{-5 + 2}{2})$
 $(-\frac{3}{2}, -\frac{3}{2})$

② $(x - h)^2 + (y - k)^2 = r^2$
 $(x - (-\frac{3}{2}))^2 + (y - (-\frac{3}{2}))^2 = (\frac{5}{2})^2$
 $(x + \frac{3}{2})^2 + (y + \frac{3}{2})^2 = \frac{25}{4}$

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
 $= \sqrt{(-\frac{3}{2} - \frac{3}{2})^2 + (\frac{2}{2} - (-\frac{5}{2}))^2}$
 $= \sqrt{(-\frac{6}{2})^2 + (\frac{-3 + 10}{2})^2}$
 $= \sqrt{(-3)^2 + (\frac{7}{2})^2}$
 $= \sqrt{\frac{36}{4} + \frac{49}{4}}$
 $= \sqrt{\frac{85}{4}}$
 $= \frac{\sqrt{85}}{2}$

Oct 6-8:22 AM

Intercepts

x	y
$\frac{11}{5}$	0
0	$-\frac{11}{9}$

$5x - 9y = 11$
 $5x - 9(0) = 11$
 $5x = 11$
 $x = \frac{11}{5}$

$5(0) - 9y = 11$
 $-9y = 11$
 $y = -\frac{11}{9}$

Oct 6-8:36 AM

x	y
4 & -3	0
0	-12

$y = x^2 - x - 12$
 $0 = x^2 - x - 12$
 $0 = (x - 4)(x + 3)$
 $x = 4$ & $x = -3$

$y = (0)^2 - (0) - 12$
 $y = -12$

Oct 6-8:39 AM

$f(x) = x + 4$ D:

a. $f(x^2) = (x^2) + 4$
 $= x^2 + 4$

b. $(f(x))^2 = (x + 4)^2$
 $= (x + 4)(x + 4)$
 $= x^2 + 8x + 16$

Oct 6-8:42 AM

① $f(x) = x + 4$ D: $(-\infty, \infty)$

② $g(x) = \frac{1}{x + 4}$
 $x \neq -4$
 D: $(-\infty, -4) \cup (-4, \infty)$

Oct 6-8:48 AM