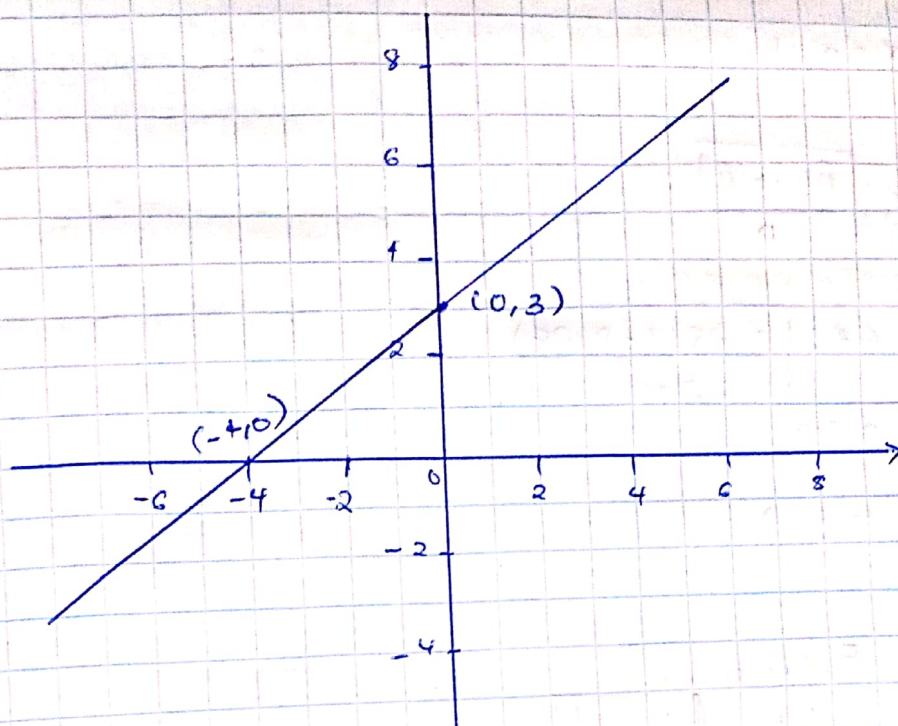


1.



x	y
0	3
-4	0
4	6

$$2. \frac{x-3}{x+1} \geq 0$$

$$x-3=0$$

$$x=3$$

$$x+1=0$$

$$x=-1$$

	$x-3$	$x+1$	$\frac{(x-3)}{(x+1)}$
$x < -1$	-	-	$\oplus$
$x = -1$	-	0	∞
$-1 < x < 3$	-	+	$\ominus$
$x = 3$	0	+	$\oplus$
$x > 3$	+	+	$\oplus$

The intervals where the function ≥ 0

$$x < -1, \quad x = 3, \quad x > 3$$

$$(-\infty, -1) \cup [3, \infty)$$

$$3. C(x) = 0.15x + 4$$

$$(a) C(100) = 0.15(100) + 4 = 19 \text{ dollars}$$

$$(b) C(x) = 0.15x + 4 = 7$$

$$0.15x = 3$$

$$x = \frac{3}{0.15} = 20 \text{ minutes}$$

4. (a) $(-1, 4), (5, 2)$

$$m = \frac{2-4}{5-(-1)} = \frac{-2}{6} = -\frac{1}{3}$$

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

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

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

$$y = -\frac{1}{3}x + \frac{11}{3}$$

(b) $(3, -2), (3, 1)$

$$m = \frac{1 - (-2)}{3 - 3} = \frac{3}{0} = \infty$$

It is a vertical line

$$x = 3$$

(c) $x - 2y + 6 = 0$ $(-4, 3)$

$$2y = x + 6$$

$$y = \frac{1}{2}x + 3$$

$$m = \frac{1}{2}$$

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

$$y - 3 = \frac{1}{2}(x + 4)$$

$$y = \frac{1}{2}x + 2 + 3$$

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

(d) $y = 4$ $(5, -2)$

$m = 0$

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

$y + 2 = 0$

$y = -2$

(e) $3x + y - 7 = 0$ $(1, -1)$

$y = -3x + 7$

$m = \frac{1}{3}$

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

$y = \frac{1}{3}x - \frac{1}{3} - 1$

$y = \frac{1}{3}x - \frac{4}{3}$

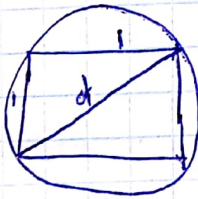
5. (a)

Area of square = $L \times W = 8 \times 8 = 64$

Area of circle = $\pi r^2 = \pi \times 4^2 = 16\pi$

Area of shaded area = $64 - 16\pi$

(b)



$d = \sqrt{1^2 + 1^2} = \sqrt{2}$

Area of circle = $\pi r^2 = \pi \left(\frac{\sqrt{2}}{2}\right)^2 = \frac{1}{2}\pi$

Area of square = $1 \times 1 = 1$

Area of shaded area = $\frac{\pi}{2} - 1$

6. Certificate of deposit = x
Bond = y

$0.04x + 0.06y = 218$

$x + y = 4000$

$y = 4000 - x$

$0.04x + 0.06(4000 - x) = 218$

$0.04x + 240 - 0.06x = 218$

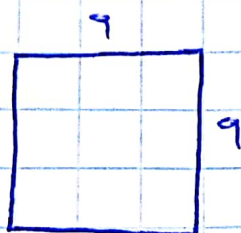
$$-0.02x = -22$$

$$x = 1100$$

$$y = 4000 - 1100 = 2900$$

$$\text{Bond} = \$2900$$

7.



$$V = L \times W \times H$$

$$= (9 - 2x)(9 - 2x)(x)$$

$$= x(9 - 2x)^2 \text{ cubic inches}$$

$$8. \quad 2x + 2y = 5$$

$$4x + y = 1$$

$$y = 1 - 4x$$

$$2x + 2(1 - 4x) = 5$$

$$2x + 2 - 8x = 5$$

$$2 - 6x = 5$$

$$-6x = 3$$

$$x = -\frac{1}{2}$$