Nombre de alumno: Jasson Yael López Ordoñez

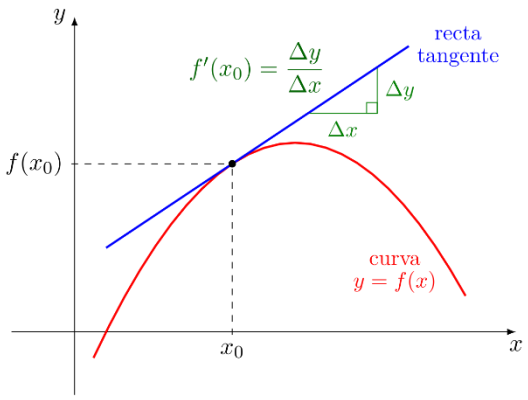
Docente: Rosvani Margine Morales Irecta

Nombre del trabajo: *Tercer reporte de ejercicios* (totalmente a mano)

Materia: Biomatemáticas

Grado: 2 do

Grupo: A



Comitán de Domínguez, Chiapas a 02 de abril del 2022.

5) $f(x) = (fg)'$ $\quad f'(x) = fg' \pm f'g$

6) $f(x)\left[\frac{f}{g}\right]$ $\quad \frac{F'(x) = fg - fg'}{g^2}$

Ejemp.

$$f(x) = \frac{4x+1}{10x^2-5} = \frac{20x(4x+1) - 4(10x^2-5)}{(10x^2-5)^2}$$

Ejercicio)

A) $f(x) = \frac{5x^2+4x}{6x^3} = \frac{10x^2(5x^2+4x) - 10x(6x^3)}{(6x^3)^2}$

2) $f(x) = \frac{3x^5-7x^4}{2x} = \frac{2(3x^5-7x^4) - 15x^4(2x)}{(2x)^2}$

3) $f(x) = \frac{10x^2+5x}{15x-2} = \frac{15(10x^2+5x) - (20x+5)(5x-2)}{(15x-2)^2}$

4) $f(x) = \frac{2x^{10}}{2x^5} = \frac{10x^4(2x^{10}) - 20x^9(2x^5)}{(2x^5)^2}$

5) $f(x) = \frac{58x}{60x} \quad \frac{60(58x) - 58(60x)}{(60x)^2}$

Teorema: La derivada de 1 potencia entera de 1 función

Sea $y = (f(x))^n$ entonces:

$y' = n\,(f(x))^{n-1}\,f'(x)$

Ejemp. $F(x) = (2x+3)^3$

$f'(x) = (3)(2x+3)^{3-1}(2)$

$f'(x) = (3)(2x+3)^2(2)$

$f'(x) = 6(2x+3)^2$

Ejercicios

1) $f(x) = (3x^4 - 5)^2$

2) $f(x) = (x+2)^3$

3) $f(x) = (6x^2 - 5x^2 + 9)^4$

4) $f(x) = (2x+1-3)^5$

5) $f(x) = (5x^2 + 4y - 3)^2$

1. $f(x) = (3x^4 - 5)^2$

$(2)(3x^4-5)^{2-1}(12x^3)$

$(2)(3x^4-5)^1(12x^3)$

$24x^3(3x^4-5)$

2. $f(x) = (x+2)^3$ (1)

$f'(x) = (3)(x+2)^{3-1}$ (1)

$f'(x) = (3)(x+2)^2$ (1)

$f'(x) = 3(x+2)$

3. $f(x) = (6x^2 - 5x + 4)^4$

$f'(x) = (4)(6x^2 - 5x + 4)^{4-1}(12x$

$f'(x) = (4)(6x^2 - 5x + 4)^3 \times (12x)$

$f'(x) = 48x + 20(6x^2 - 5x + 4)^3$

4. $(2xy - 3)^5$ (2)

$10(2xy - 3)^4$

5. $(5x^2 + 4y - 3)^2$

$(2)(5x^2 + 4y - 3)^2(10x + 4)$

$20x + 8(5x^2 + 4y - 3)$

Tarea

1) $f(x) = 3x^2$
2) $f(x) = 5$
3) $f(x) = -2x$
4) $f(x) = -2x + 12$
5) $f(x) = -2x^2 + 12$
6) $f(x) = 4x^3 + 6x$
7) $f(x) = 8x^6$
8) $f(x) = 7$
9) $f(x) = (3x^3 + 12x) + (6x^4 + 16)$
10) $f(x) = (8x + 12) - (13x^2 - x)$
11) $f(x) = (7x^4 + 6x^3 - 5x^2 + x)^3$
12) $f(x) = \frac{18x^6 - 6x^3 - 4}{2x^4}$
13) $f(x) = \frac{2x^3 - x^2}{6x^2 + x + 12}$
14) $f(x) = 78$
15) $f(x) = (2x^3 + 5x^2 + 6x)^4$

1. $f(x) = 3x^2 = f'(x) = 3(2x) \quad f'(x) = 6x$
2. $f(x) = 5 : \quad f'(x) = \emptyset$
3. $f(x) = -2x : \quad f'(x) = -2(2) \quad f'(x) = \emptyset$
4. $f(x) = -2x + 12 : \quad f'(x) = -2 + 12$
5. $f(x) = -2x^2 + 12 : \quad f'(x) = -2x + 12$
6. $f(x) = 4x^3 + 6x : \quad f'(x) = 4x^2 + 6$

7. $f(x) = 8x^6 = f'(x) = 8(6x^5)$ $f'(x) = 48x^5$

8. $f(x) = 7 = f'(x) = \emptyset$

9. $F(x) = (3x^3 + 2x) + (6x^4 + 6) =$
$f'(x) = 24x^3 + 6(3x^3 + 2x) + 9x^2 + 2(6x^4 + 6)$

10. $F(x) = (8x + 2) - (3x^2 - x)$
$F'(x) = 6x - 1(8x + 2) - 8 + 2(3x^2 - x)$

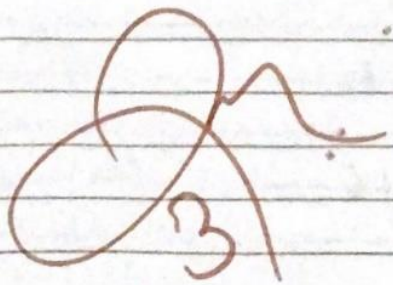
11. $F(x) = (7x^4 + 6x^3 - 5x^2 + x)^3$
$F'(x) = (3)(7x^4 + 6x^3 - 5x^2 + x)^{3-1}(28x^3 + 18x^2 - 10x + 1)$
$F'(x) = 84x^5 + 54x - 30 + 1(7x^4 + 6x^3 - 5x^2 + x)^3$

12. $F(x) = \frac{8x^6 - 6x^3 - 4}{2x^4}$ $F'(x) = \frac{8x^3 \cdot (8x^6 - 6x^3 - 4) - 48x^5 - 18x^3(2x^4)}{(2x^4)^2}$

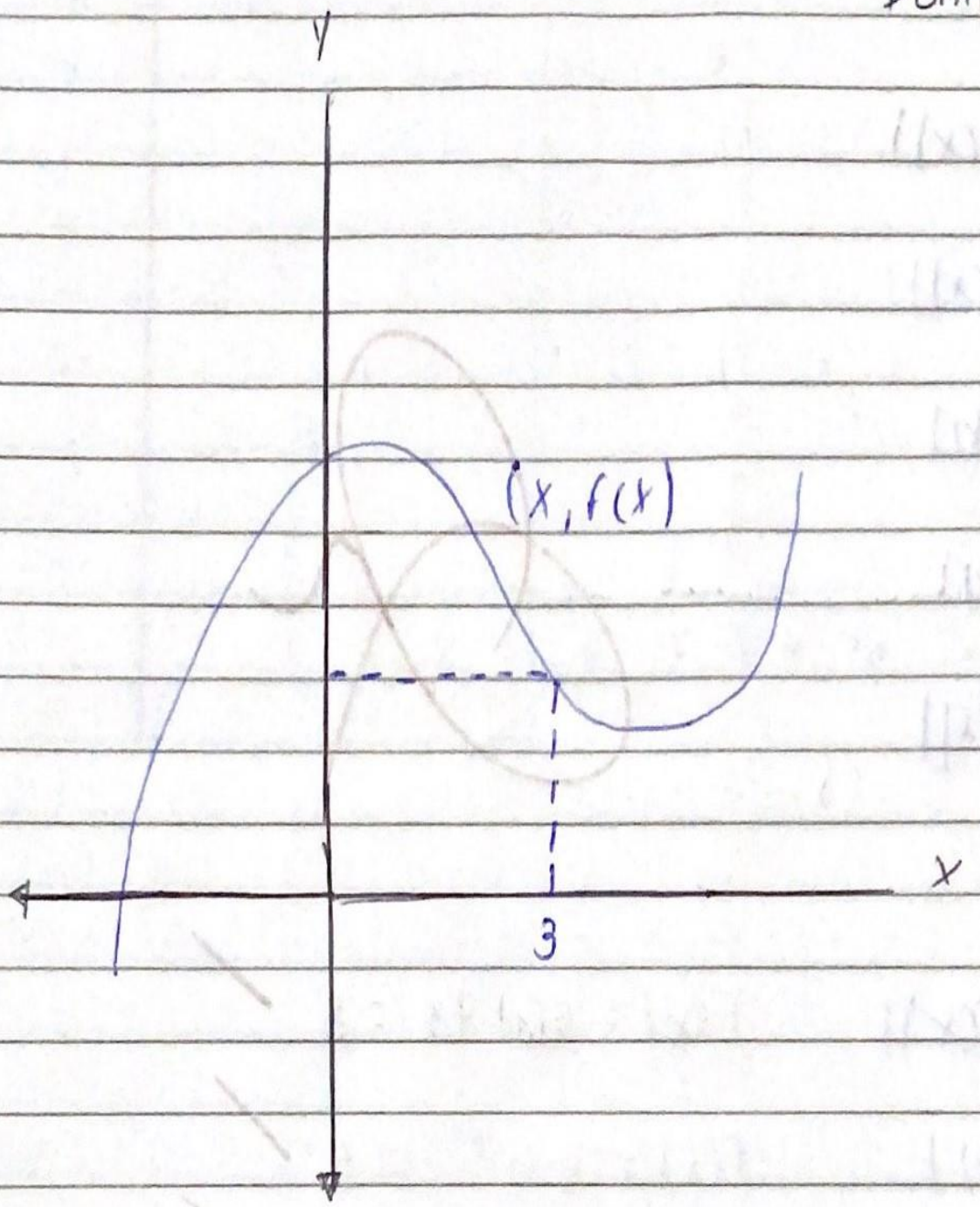
13. $F(x) = \frac{2x^3 - x^2}{6x^2 + x + 2}$
$F'(x) = \frac{12x + 1(2x^3 - x^2) - 6x^2 - 2x(6x^2 + x + 2)}{(6x^2 + x + 2)^2}$

14. $F(x) = 78$ $F'(x) = 78 = 0$

15. $F(x) = (2x^3 + 5x^2 + 6x)^4$ $F'(x) = (4)(2x^3 + 5x^2 + 6)^{4-1}(6x^2 + 10x + 6)$
$F'(x) = 24x + 40(2x^3 + 5x^2 + 6x)^3$



Dominio Físico



Ejem. $F(x) = 3x$

$y = 3x$

$\lim_{x \to 3} 3x$

Ejercicio

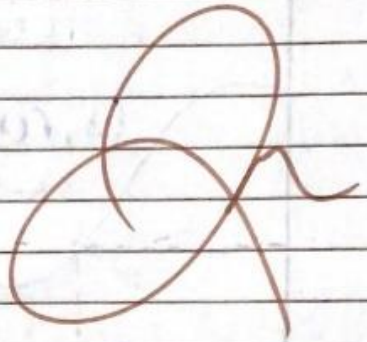
1) $(x = 5x + 3, f(x))$

2) $(x = 5x^2, f(x))$

3) $(x = 2x^3, f(x))$

4) $(x = 7x, f(x))$

5) $(x = 8x^2, f(x))$



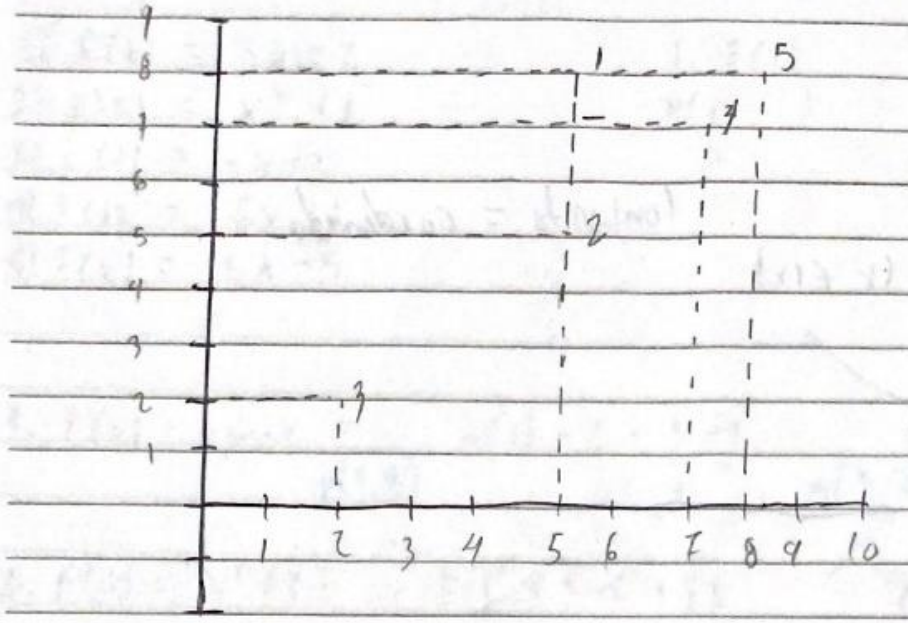
1. $(x = 5x + 3, f(x))$ $f(x) = 5(1) + 3 = 8$

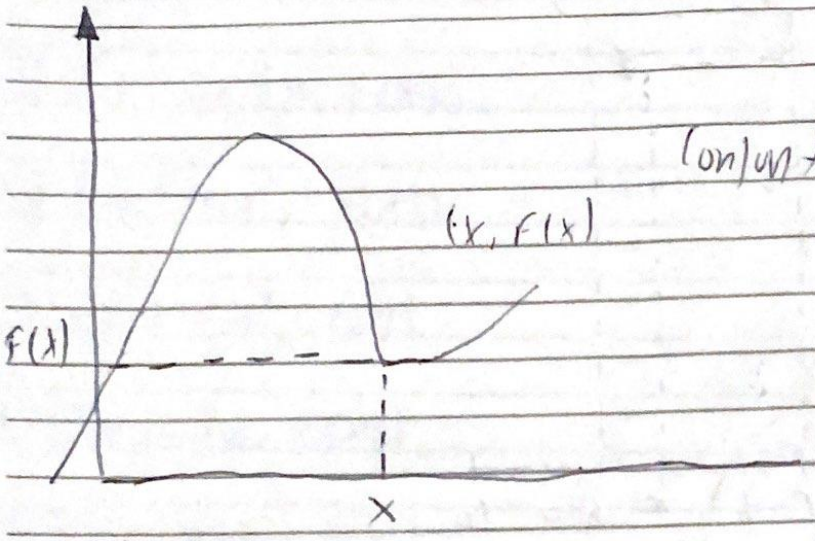
2. $(x = 5x^2, f(x))$ $f(x) = 5(1)^2 = 5$

3. $(x = 2x^3, f(x))$ $f(x) = 2(1)^3 = 2$

4. $(x = 7x, f(x))$ $f(x) = 7(1) = 7$

5. $(x = 8x^2, f(x))$ $f(x) = 8(1)^2 = 8$


9
8
7
6
5
4
3
2
1
1
2
3
4
5
6
7
8
9
10
5
4
2
3



Conjunto = cordenada

Traza gráfico $F(x) = 2x - 1$

Si F(0)
P(0,)

$F(0) = 2(0) - 1$
$F(0) = 0 - 1$
$F(0) = -1$
$(0, -1)$

Si F(1)
q (1,)

$F(1) = 2(1) - 1$
$F(1) = 2 - 1$
$F(1) = 1$
$(1, 1)$

$F(x) = 2x - 1$
Si F(0)
P(0, -1)

q (1, 1)
$F(0) = 2(0) - 1$
$= 0 - 1$
$= -1$

$F(1) = 2(1) - 1$
$= 2 - 1$
$= 1$

t) racional

1) $F(x) = 3x - 2$ — Si $F(1)$ — Si $F(3)$
2) $f(x) = x^2 + 3$ — $P(1, \quad)$ — $q(3, \quad)$
3) $f(x) = -x + 2$ — x — x
4) $F(x) = 6x + 1$
5) $F(x) = 5x - 5$

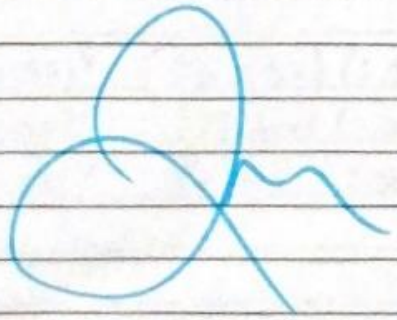
1. $F(x) = 3x - 2 =$ $3(1) - 2 = 3 - 2$ $= 1$ — $P(1,1)$ — $3(3) - 2 = 9 - 2$ $= 7$ — $q(3,7)$

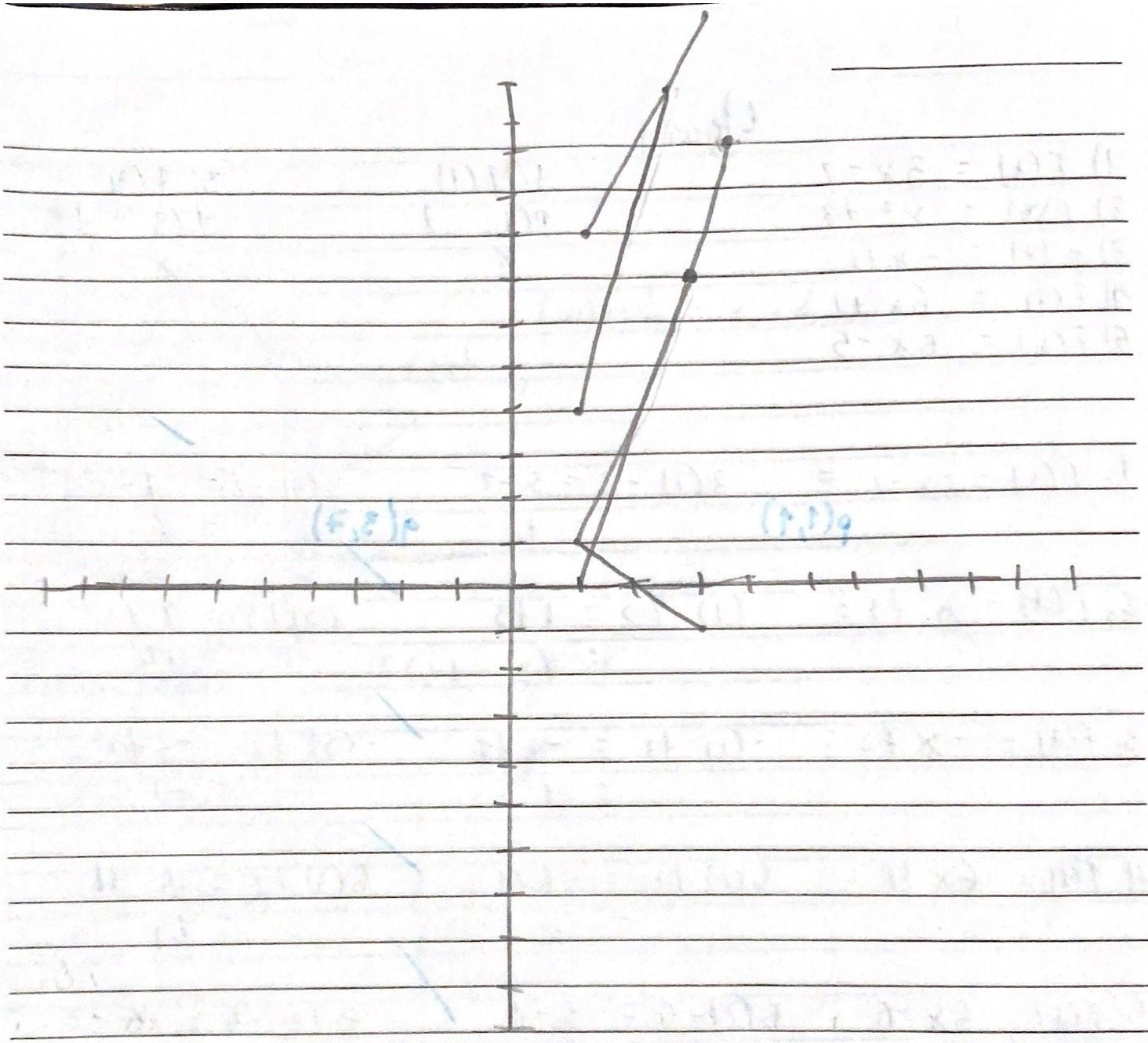
2. $F(x) = x^2 + 3 =$ $(1)^2 + 3 = 1 + 3$ $= 4$ — $(3)^2 + 3 = 9 + 3$ $= 12$

3. $f(x) = -x + 2 :$ $-(1) + 2 = -1 + 2$ $= 1$ — $-(3) + 2 = -3 + 2$ $= -1$

4. $F(x) = 6x + 1 =$ $6(1) + 1 = 6 + 1$ $= 7$ — $6(3) + 2 = 18 + 1$ $= 19$

5. $F(x) = 5x - 5$ $5(1) - 5 = 5 - 5$ $= 0$ — $5(3) - 5 = 15 - 5$ $= 10$




(-5,2)p
(1,1)q

Cultivo MO ↑ 50 % c/1hr

Enfonce(e) ... $N_0 = 2500$ UFC

$N(t) = N(t)^4$

$N(1) = N_0 + 0.5\ N_0 = N_0(1.5)^4$

$N(2) = N_0\ (1.5)^2$

$N(3) = N_0\ (1.5)^3$

1) Mo ↑ 85 c/h → 3 hrs / 4hrs

2) Mo ↑ 60 % c/h → 1hr / 5 hrs

3) Mo ↑ 20 % c/h → 1hr / 2hrs

4) Mo ↑ 35 % c/h → 6hrs / 12hrs / 24hrs

1. $85 \div 100 = 0.85 + 1 = (1.85)^3 = (6.33)\ (2500) = 15,824$ c/3h

1. $85 \div 100 = 0.85 + 1 = (1.85)^4 = (11.71)\ (2500) = 29,275$ c/4hrs

2. $60 \div 100 = 0.6 + 1 = (1.6)^1 = (1.6)\ (2500) = 4,000$ c/hr

2. $60 \div 100 = 0.6 + 1 = (1.6)^5 = (10.48)(2500) = 26,200$ c/5hrs

3. $20 \div 100 = 0.2 + 1 = (1.2)^1 = (1.2)\ (2,500) = 3,000$ c/h

3. $20 \div 100 = 0.2 + 1 = (1.2)^2 = (1.4^1)(2,500) = 3,500$ c/2hrs

4. $35 \div 100 = 0.35 + 1 = (1.35)^6 = (6.053)\ (2,500) = 15,132.5$ c/6hr.

4. $35 \div 100 = 0.35 + 1 = (1.35)^{12} = (36.64)\ (2,500) = 91,600$ c/12hrs

4. $35 \div 100 = 0.35 + 1 = (1.35)^{24} = (32.4)\ (2,500) = 81,000$ c/24hrs.

Temperatura que se Mide en °C y °F determinada por la igualdad

For= $9C - 5F + 160 = 0$

Expresa en F c/f de C

$5F = 9C + 160$

$F = \frac{9C + 160}{5}$

$F = \frac{9}{5}C + 32 \rightarrow F(C)$

Expresa en C c/f de F

$9C = 5F - 160$

$C = \frac{5F - 160}{9} \rightarrow C(F)$

38°C

$F = \frac{9(38) + 160}{5}$

$F = \frac{342}{5} + 32$

$F = 68.4 + 32$

$F = 100.4\ °F$

$C = \frac{5(100.4) - 160}{9}$

$C = \frac{502 - 160}{9}$

$C = \frac{342}{9} = 38\ °C$

Convierte de °c a °F o °F a °c según corresponda y comprueba

1). 20 °c
2) 104 °F
3) 140 °F
4) 37.2 °c
5) 35.5 °c
6) 95 °F
7) -4 °F
8) -5 °c

1. 20 °c $F = \frac{9(20) + 160}{5}$

$F = \frac{180}{5} + 32$

$F = 36 + 32$

$F = 68\ °F$

$C = \frac{5(68) - 160}{9}$

$C = \frac{340}{} - 160$

$C = \frac{180}{9} = 20°c$

3.) 140 °F $C = 5(140)$

$C = 700 - 160$

$C = 540/9 = 60\ °c$

$F = 9(60)$

$F = 540/5$

$F = 108 + 32$

$F = 140$

2. 104 °F $C = 5(104)$

$C = 520 - 160$

$C = 360/9 = 40$

$F = 9(40)$

$F = 360/5$

$F = 72 + 32$

$F = 104$

4. 37.2°C

$F = 9(37.2)$

$F = 334.8/5$

$F = 66.96 + 32$

$F = 98.96\ ^\circ F$

$C = 5(98.96)$

$C = 494.8 - 160$

$C = 334.8/9$

$C = 37.2$

5. 35.5 °C

$F = 9(35.5)$

$F = 319/5$

$F = 63.8 + 32$

$F = 95.8\ ^\circ F$

$C = 5(95.8)$

$C = 479 - 160$

$C = 319/9$

$C = 35.5$

6. 95°C

$C = 5(95^\circ)$

$C = 475 - 160$

$C = 315/9$

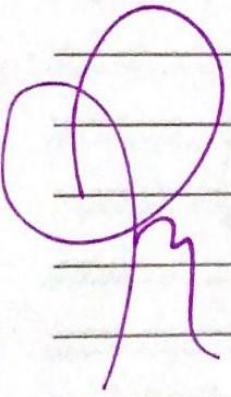
$C = 35^\circ C$

$F = 9(35^\circ C)$

$F = 315/5$

$F = 63 + 32$

$F = 95^\circ$



7. -4 °F

$C = 5(-4)$

$C = 1 - 160$

$C = -159/9$

$C = -17.6\ ^\circ C$

$F = 9(-17.6)$

$F = -8.45$

$F = -1.76 + 32$

$F = 4$

8. -5°C

$F = 9(-5)$

$F = 4/5$

$F = 0.8 + 32$

$F = 32.8\ ^\circ F$

$C = 5(-17.33)$

$C = -12.33 - 160$

$C = -172/9$

$C = -5^\circ C$