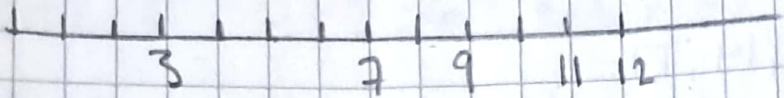
Taller números Naturales

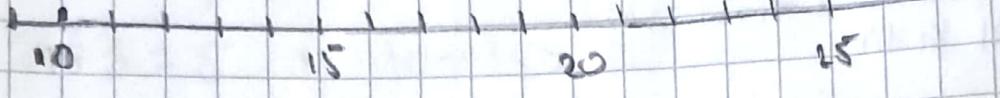
① 1 < 2 a: 1 (1+1=2)
4 < 9 a: 5 (4+5=9)
0 < 10 a: 10 (0+10=10)
5 < 10 a: 5 (5+5=10)
1 < 5 a: 4 (1+4=5)
3 < 81 a: 79 (3+79=81)

②

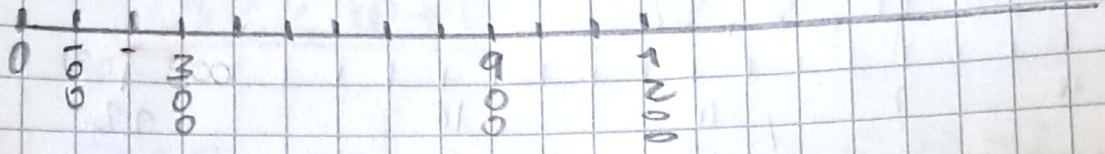
a



b

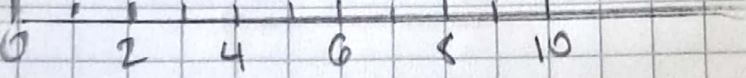


c

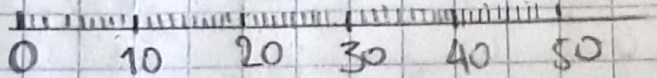


d

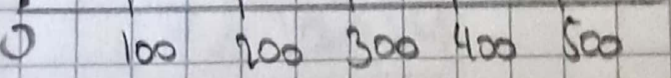
e



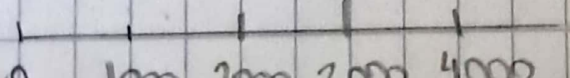
f



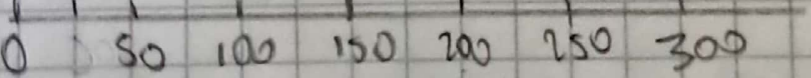
g



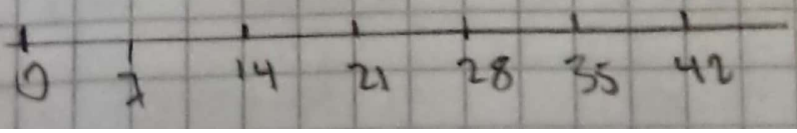
h



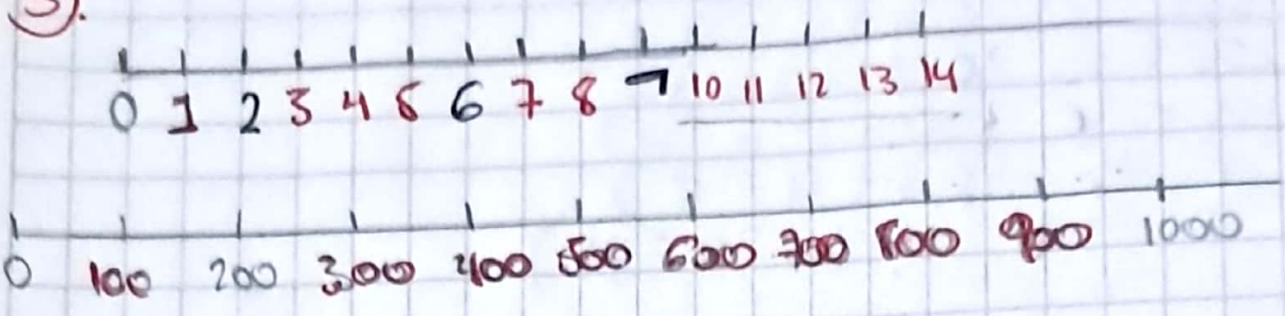
i



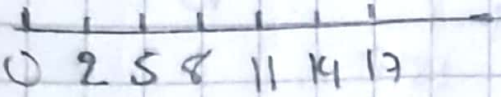
j



③.

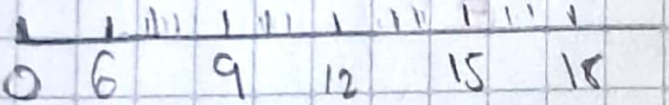


④ a. 2, 5, 8, 11, 14, 17

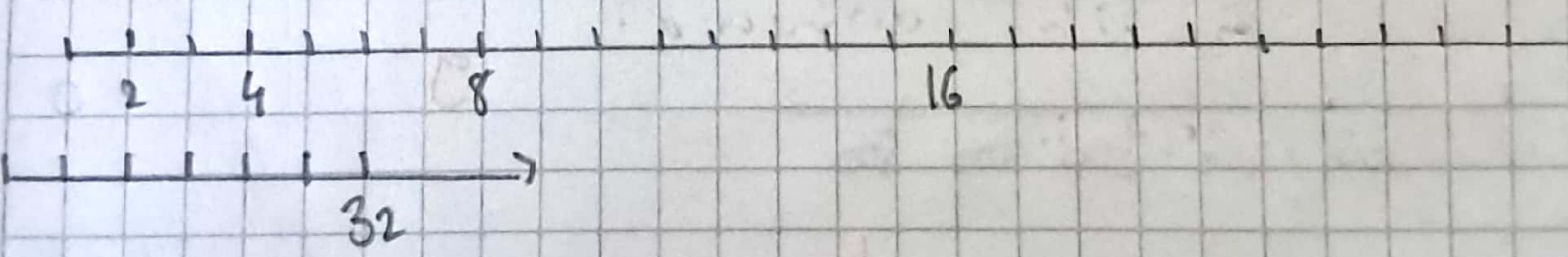


b. 1, 2, 4, 7, 11, 16, 22

c. 18, 15, 12, 9, 6



d. 2; 4, 8, 16, 32



5. a $28 < 37$
b $1009 < 1101$
c $2008 < 2012$
d $1800 < 3010$
e $2010 > 2007$

6.1 $3+2 < 4+2$? correcto
R/ $3+2=5$, $4+2=6$ entonces $3+2 < 4+2$

2 $2<3$ y $4<5$, entonces $2+3 > 10+15$? Incorrecto
R/ $2+3=5$ y $10+15=25$
$2+3 < 10+15$

3 $3<4$ entonces $3-2 < 4-2$ correcto
R/ $3-2=1$ y $4-2=2$ entonces
$3-2 < 4-2$

4 Si $3<4$ y $5<6$ entonces $7 < 12+14$ correcto
R/ $12+14=26$ entonces
$7 < 12+14$

7. a. El animal con mayor número son los conejos

b. El menor número de animales son los cerdos

c. 15 cerdos 28 conejos
25 gallinas 14 ovejas

d Don Jacinto tiene en su totalidad 82 animales

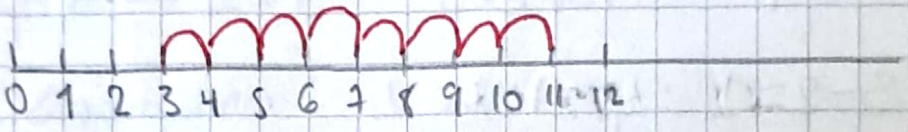
8 $-3 < 1$ $0 = 0$ $2 < 3$

$0 < 1$ $-2 < 2$ $-1 < 0$

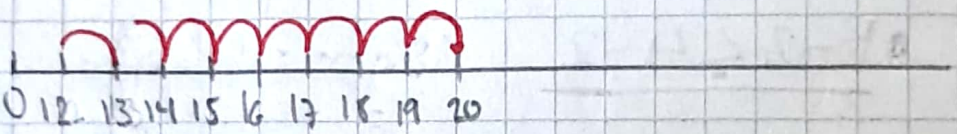
9

+	23	45	62	730
100	123	145	162	830
80	103	125	142	810
0	23	45	62	730
93	116	138	155	823

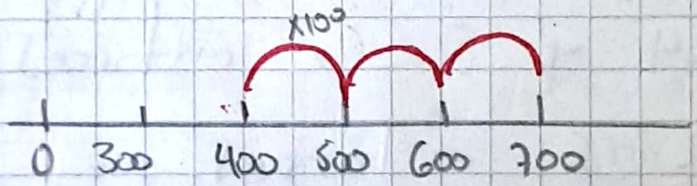
10 $3+8$



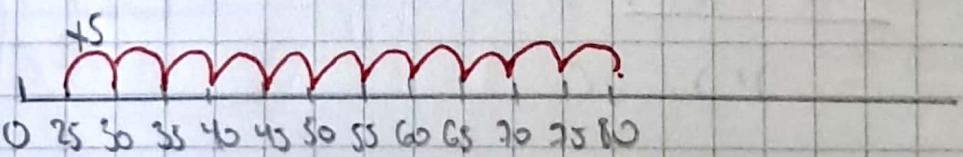
- $12+8 = 20$



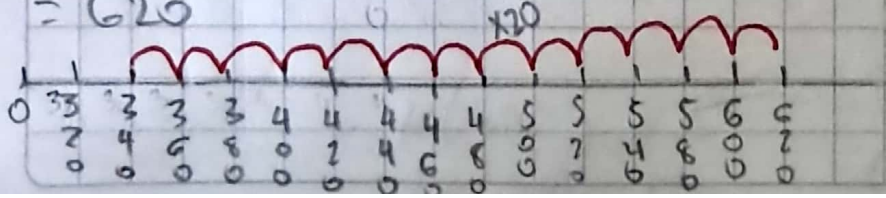
- $400+300 = 700$



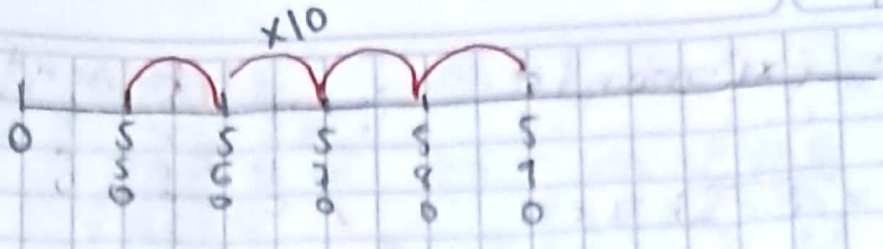
- $25+55 = 80$



- $340+280 = 620$



• 550 + 40 = 590



11 72/minuto

1 minuto = 60 sg 1 d = 24 h

1 h = 60 m = 3600 sg 1 a = 365 d = 8,760 h

525,600 m

R// 4,320 latidos x h

37,843,200 latidos / año

966,893,760,000 latidos / 70 años

12 Andres = 152 cm

Alicia = 152 cm − 15 cm = 137 cm

Antonia = 152 cm + 6 cm = 158 cm

13 $7^2 = 49$

$5^5 = 3,125$

$10^6 = 1'000,000$

$2^7 = 128$

$4^5 = 1,024$

T^2

a^4

14

3^5 - exponente → $3^5 = 243$

$3 \times 3 \times 3 \times 3 \times 3$

Base: 3, 9, 27, 81, 243

7^3 → exponente → $7^3 = 343$

$7 \times 7 \times 7$

Base: 49, 343

5^2 - exponente → $5^2 = 25$

$5 \times 5 = 25$

Base

5^4 - exponente → $5^4 = 625$

$5 \times 5 \times 5 \times 5$

Base: 25, 125, 625

8^2 - exponente → $8^2 = 64$

$8 \times 8 = 64$

Base

4^3 → exponente → $4^3 = 64$

$4 \times 4 \times 4$

Base: 16, 64

2^5 - exponente → $2^5 = 32$

$2 \times 2 \times 2 \times 2 \times 2$

Base: 4, 8, 16, 32

$1^{54} = 1$

15 $\sqrt{9} = 3$ $\quad \sqrt[4]{625} = 5$ $\quad \sqrt{144} = 12$

$\sqrt{81} = 9$ $\quad \sqrt[7]{128} = 2$ $\quad \sqrt[5]{32} = 2$

16 a

35	5
7	7
1	

45	3
15	3
5	5
1	

m.c.d

$35 - 45 = 5$

$5 \times 3 \times 3 \times 7$ $\quad$ m.c.m $= 315$

b

125	5
25	5
5	5
1	1

120	2
60	2
30	2
15	3
5	5
1	1

mcd: 5

mcm: 3000

c

72	2
36	2
18	2
9	3
3	3
1	1

48	2
24	2
12	2
6	2
3	3
1	1

M c d = 3

m . c m = 144

$2^4 \times 3^2 = 16 \times 9 = 144$

d

27	3
9	3
3	1

54	2
27	3
9	3
3	3
1	1

M c d = 3

m . c m = 54

$3^3 \times 2 = 27 \times 2 = 54$

e

100	2
50	2
25	5
5	5
1	1

230	2
115	5
23	23
1	1

M c d = 5

m . c. m = 2300

$2^2 \times 5^2 \times 23 = 4 \times 25 \times 2$

$= 2300$

f

88	2
44	2
22	2
11	11
1	1

121	11
11	11
1	1

M . c d = 11

m . c . m = 968

$2^3 \times 11^2 = 8 \times 121 = 96$

g

320	2
160	2
80	2
40	2
20	2
10	2
5	5
1	1

240	2
120	2
60	2
30	2
15	5
3	3
1	1

M . c . d = 5

m . c . m = 960

$2^6 \times 5 \times 3 = 64 \times 5 \times 3$

$= 960$

h

81	3
27	3
9	3
3	3
1	1

63	3
21	3
7	7
1	

M.C.d: 3

m.c.m = 567

$3^4 \times 7 = 81 \times 7 = 567$

i

175	5
35	5
7	7
1	

225	3
75	3
25	5
5	5
1	

M.C.d: 5

m.c.m = 1575

$3^2 \times 5^2 \times 7 = 9 \times 25 \times 7$

$= 1575$

J

16	2
8	2
4	2
2	2
1	1

40	2
20	2
10	2
5	5
1	

M.C.d: 2

m.c.m = 80

$2^4 \times 5 = 16 \times 5 = 80$

K

18	2
9	3
3	3
1	

24	2
12	2
6	2
3	3
1	

30	2
15	5
3	3
1	

M.C.d: 3

m.c.m: 360

$2^3 \times 3^2 \times 5 = 360$

l

76	2
38	2
19	19
1	

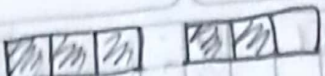
240	2
120	2
60	2
30	2
15	5
3	3
1	

M.C.d: 2

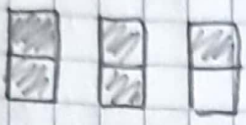
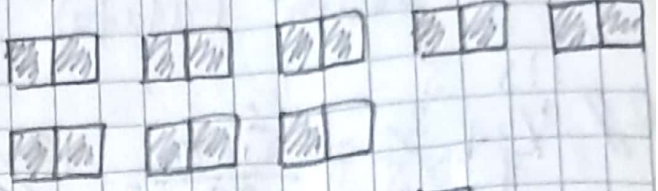
m.c.m =

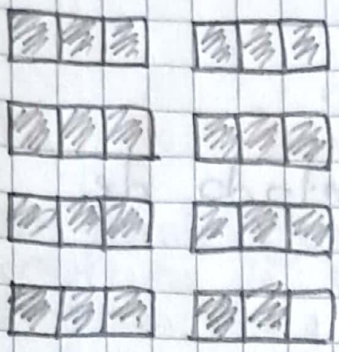
$2^4 \times 3 \times 19 \times 5 = 4560$

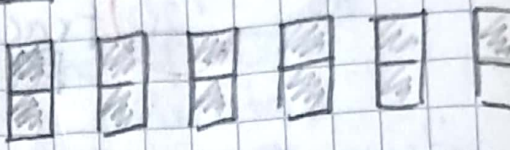
Taller números fraccionarios

① $\frac{2}{3}$  $\frac{4}{2}$  $\frac{5}{3}$ 

$\frac{7}{2}$  $\frac{3}{9}$  $\frac{2}{4}$ 

$\frac{5}{2}$  $\frac{15}{2}$ 

$\frac{23}{3}$  $\frac{12}{4}$ 

$\frac{11}{2}$ 

② $\frac{2}{2} > \frac{1}{2}$, $\frac{2}{4} < \frac{3}{4}$, $\frac{7}{8} = \frac{7}{8}$, $\frac{1}{2} < \frac{2}{2}$

③ $8.\frac{3}{4} = \frac{8 \times 4 + 3}{4} = \frac{35}{4}$ $6.\frac{2}{3} = \frac{6 \times 3 + 2}{3} = \frac{2}{}$

$5.\frac{3}{7} = \frac{5 \times 7 + 3}{7} = \frac{38}{7}$

$2.\frac{4}{9} = \frac{2 \times 9 + 4}{9} = \frac{22}{9}$

$7.\frac{3}{5} = \frac{7 \times 5 + 3}{5} = \frac{38}{5}$

4. a. $1/4$ tomates

$2/5$ Alubias

$280 m^2$ Patatas

R// $1/4 + 2/5 = \frac{5+8}{20} = 13/20$

$1 - 13/20 = 7/20$ Fracción Plantada de Patatas

$7/20\ x = 280$

$X = 280 \cdot 20/7$

$X = 5600/7$

$X = 800 m^2$ → Superficie total

b. 0.875 Pasos/m

$1000 \times 0.875 = \underline{875\ m}$

$1400\ m = 1600$ Pasos

C.

$(4.5) / (3/8) = (4.5) \times (8/3)$

$(4.5 \times 8)/3 = 36/3 = 12$

R/ 12 frascos

Taller de Geometria

① Un Paralelogramo es una figura geométrica de cuatro lados opuestos paralelos entre sí. Eso significa que las lineas que forman los lado nunca se cruzarán, y los ángulos opuestos tendran la misma medida.

② Perímetro = $2 \times \pi \times$ Radio

$P = 2 \times 3,1415 \times 22,6\ cm$

$P = \underline{141,99\ cm}$

③ $C = 2 \times \pi \times R$ $\quad R = 8,74 cm$

$C = 2 \times 3,1415 \times 8,74\ cm$

$C = \underline{54,91\ cm}$

④ Área = base x Altura

Área = 3cm x 7 cm

Área = $\underline{21 cm^2}$

⑤ Área = Lado x Lado

Área = 2cm x 2cm

$A = 4cm^2$

P = Lado + lado + lado

P = 4cm + 4cm + 6cm

P = 14cm

⑥ $A = \frac{b \times h}{2}$

$A = \frac{4cm \times 4cm}{2}$

$A = \frac{16cm^2}{2} = 8cm^2$

$A = \frac{8cm \times 6cm}{2}$

$A = \frac{48cm^2}{2} = 24cm^2$

P = 8cm + 8cm + 6cm =

P = 22cm

$A = \pi \times r^2$

$A = 3,1415 \times 8^2$

$A = 201,056\ cm^2$

$P = 2 \times \pi \times r$

P = 2 x 3,1415 x 8

P = 50,264cm

$A = 3,1415 \times 9^2$

$A = 254,461\ cm^2$

P = 2 x 3,1415 x 9

P = 56,547 cm

$A = 3,1415 \times 5^2$

$A = 78,5375\ cm^2$

$P = 2 \times 3,1415 \times 5$

$P = 31,415\ cm$

$A = B \times h$

$A = 5cm \times 9cm$

$A = 45cm^2$

$P = Lado + lado + lado + lado$

$P = 5cm + 9cm + 5cm + 9cm$

$P = 28\ cm$

$A = 9cm \times 3cm$

$A = 27cm^2$

$P = 9cm + 3cm + 9cm + 3cm$

$P = 24cm$

Taller de números enteros

1) a. 6000 m

b. -150 °C

c. -582 a.c

d. 150000

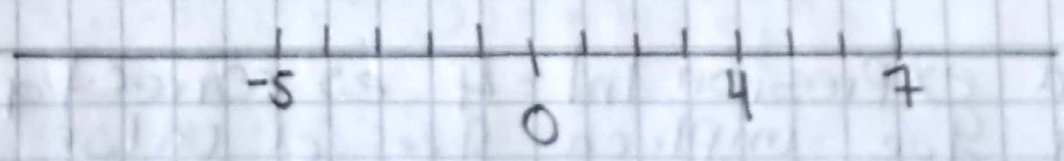
e. 1 m

2) 3¢ -Z , -8¢ +Z , -15 € -Z

-5 € -Z , 7 € +Z , -6¢ +Z

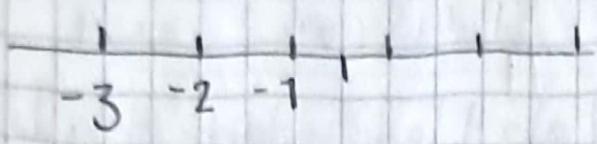
-18 € -Z

3)

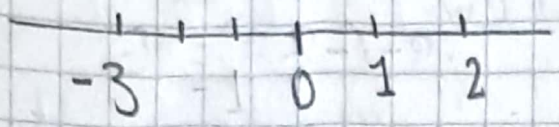


a) -5, 4, 7, 0

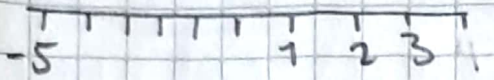
b $-3, -2, -1$



c $-3, 2, 0, 1$



d $1, 2, 3, -5$



e $0, 4, -2, -1$

f $8, -7, 6, -5$

(4) El valor absoluto de cualquier número siempre es igual o mayor que 0

a) $|n| = -2$ es incorrecto porque el valor absoluto no puede ser negativo

b) la expresión $|n| = 4$ es correcta ya que implica que el valor absoluto de $n = 4$. Esto significa

Que n Puede ser igual a 4 o -4 ya que ambas tienen un valor absoluto de 4.

6) a) (12) + (-15) = -3 b) (-39) + 51 = 12
c) -12 + 9 = -3 d) (-21) + (-11) = -32
e) (-10) + (12) = -8 F) 19 - (-38) = 57
g) (-32) + 75 = 43 h) (-48) + (-47) = -95

7) a) -15 - 19 = -34
b) -8 - 30 = -38
c -495 - (-190) = -305
d 35 - 10 = 25
e 45 - (-90) = 135
f 12 - (-300) = 312
g 450 - (-30) = 480

8) a -3 x 2 = -6
b (-4)(-3)(-9) = -108
c (-8)(10)(-25) = 2000
d -(19)(-15)(-150) = -42750
e 290(-16)(-350) = 1,624,000
f. -(19)(-150)(380) = 1083000

9 $58-(-80)=146$

R/ La diferencia de la temperatura registrada es de 146°C

10 $21-11=10 \quad 10\times6=60$

$73+60=133$

R/ Después de 6 meses Camila tendrá en su libreta 133 euros.

11 $2x=64 \quad x=64/2 \quad x=32$

a) Ambas trabajaron 32 horas

b) $384+64=448$

R/ Rosa ha ganado 448 euros

12 $-16+(11\times(-1))=-16-11=-27$

R/ La altura del edificio es de 27 m

13 $N_1=55$

$N_2=5+55=60$

$N^2=115$

$T=55+60+115$

$=230$

R/ Entre las 3 niñas se repartieron 230 euros.

14 Manoli = 46 años Diferencia = 29
hijo = 17

46+11 = 57 (57-29 = 28 ✓)

a/ Manoli tendría 57 años cuando su hijo tenga 28

15 1500 Folios x día

a 1500 x 7 = 10.500

En una semana se gastan 10.500 Folios

b 10500 x 4 = 42.000

(42000/500) x 6 = 504

El gasto del mes de abril fue de 504 euros

Taller de Productos notables y Ecuaciones

- Productos notables

- $(x+2)^2$

$= (x+2)\cdot(x+2) = x^2+2x+2x+4$

$= \underline{x^2+4x+4}$

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

$= 9-3x-3x+x^2$

$= \underline{9-6x+x^2}$

- $(2y+4x)^2 = (2y+4x)(2y+4x)$

$= 4y^2+8xy+8xy+16x^2$

$= \underline{4y^2+16xy+16x^2}$

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

$= a^2+ar+ar+r^2$

$= \underline{a^2+2ar+r^2}$

- $(2x+2)^2 = (2x+2)(2x+2)$

$= 4x^2+4x+4x+4$

$= \underline{4x^2+8x+4}$

- $(x-3)^2 = (x-3)(x-3)$
  $= x^2 - 3x - 3x + 9$
  $= \underline{x^2 - 6x + 9}$

- $(6m-4)^2 = (6m-4)(6m-4)$
  $= 36m^2 - 24m - 24m + 16$
  $= \underline{36m^2 - 48m + 16}$

- $(-a+2b)^2 = (-a+2b)(-a+2b)$
  $= a^2 - 2ab - 2ab + 4b^2$
  $= \underline{a^2 - 4ab + 4b^2}$

- $(a-b)^2 = (a-b)(a-b)$
  $= a^2 - ab - ab + b^2$
  $= \underline{a^2 - 2ab + b^2}$

- $(x+y)^2 = (x+y)(x+y)$
  $= x^2 + xy + xy + y^2$
  $= \underline{x^2 + 2xy + y^2}$

2 • $(4m+3n)(4m-3n)$

$= 16m^2 - 12mn + 12mn - 9n^2$

$= \underline{16m^2 - 9n^2}$

• $(x-4y)(x+4y)$

$= x^2 + 4xy - 4xy - 16y^2$

$= \underline{x^2 - 16y^2}$

• $(2x+3y)(2x-3y)$

$= 4x^2 - 6xy + 6xy - 9y^2$

$= \underline{4x^2 - 9y^2}$

• $(a+1)(a-1)$

$= a^2 - a + a - 1$

$= \underline{a^2 - 1}$

• $(3m+6)(3m-6)$

$= 9m^2 - 18m + 18m - 36$

$= \underline{9m^2 - 36}$

- $(8x-3)(8x+3)$
  $= 64x^2 + 24x - 24x - 9$
  $= \underline{64x^2 - 9}$

3. $(x+y)^3 = (x+y)(x+y)(x+y)$
  $= (x^2 + xy + xy + y^2)(x+y)$
  $= (x^2 + 2xy + y^2)(x+y)$
  $= x^3 + 2x^2y + xy^2 + x^2y + 2xy^2 + y^3$
  $= \underline{x^3 + 3x^2y + 3xy^2 + y^3}$

- $(3m+2n)^3 = (3m+2n)(3m+2n)(3m+2n)$
  $= (9m^2 + 6mn + 6mn + 4n^2)(3m+2n)$
  $= (9m^2 + 12mn + 4n^2)(3m+2n)$
  $= 27m^3 + 36m^2n + 12mn^2 + 18m^2n + 24mn^2 + 8n^3$
  $= \underline{27m^3 + 54m^2n + 36mn^2 + 8n^3}$

- $(2q-r)^3 = (2q-r)(2q-r)(2q-r)$
  $= (4q^2 - 2qr - 2qr + r^2)(2q-r)$
  $= (4q^2 - 4qr + r^2)(2q-r)$
  $= 8q^3 - 8q^2r + 2qr^2 - 4q^2r + 4qr^2 - r^3$
  $= \underline{8q^3 - 12q^2r + 6qr^2 - r^3}$

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

$= (4x^2 - 10xy^2 - 10xy^2 + 25y^4)(-2x+5y^2)$

$= (4x^2 - 20xy^2 + 25y^4)(-2x+5y^2)$

$= -8x^3 + 40x^2y^2 - 50xy^4 + 20x^2y^2 - 100xy^4 + 125y^6$

$= \underline{-8x^3 + 60x^2y^2 - 150xy^4 + 125y^6}$

④ • $(x^3 - 8y)(x^3 + y^2) = \underline{x^6 + x^3y^2 - 8x^3y - 8y^3}$

• $(x^3 - 8y^2)(x^3 + y^2)$

$= x^6 + x^3y^2 - 8y^2x^3 - 8y^4$

$= x^6 - 7x^3y^2 - 8y^4$

Ecuaciones

① a. $3x - 1 = 2x + 5$

$= 3x - 2x = 5 + 1$

$\underline{x = 6}$

b. $x - 3 = 9$

$= x = 9 + 3$

$\underline{x = 12}$

c $3y = 90$

$y = 90/3$

$y = 30$

d $3x + 9 = 2x - 3$

$3x - 2x = -3 - 9$

$x = -12$

e $\frac{x+9}{5} = 2$

$x + 9 = 2 \times 5 = 10$

$x = 10 - 9$

$x = 1$

f $-2x - 6 = -4x + 12$

$-2x + 4x = 12 + 6$

$2x = 18$

$x = 18/2$

$x = 9$

g $-10x - 2 = -6x - 18$

$-10x + 6x = -18 + 2$

$-4x = -16$

$x = -16/-4$

$x = 4$

2.

- $5x-5=-2x-26$

$5x+2x=-26+5$

$7x=-21$

$x=-21/7$

$x=-3$

- $-9x+8=5x-6$

$-9x-5x=-6-8$

$-14x=-14$

$x=-14/-14$

$x=1$

- $x-9=2x-10$

$x-2x=-10+9$

$-x=-1$

$x=-1/-1$

$x=1$

- $-9x-3=-4x+12$

$-9x+4x=12+3$

$-5x=15$

$x=15/-5$

$x=-3$

- $6x+1=8x-5$

$6x-8x=-5-1$

$-2x=-6$

$x=-6/-2$

$x=3$

- $4x-17=3x-24$

$4x-3x=-24+17$

$x=-7$

Taller Determinantes

① a. $\begin{pmatrix} 1 & 0 \\ 2 & 0 \end{pmatrix} = 0 - 0 = \underline{0}$

b $\begin{pmatrix} 4 & 7 \\ -2 & 9 \end{pmatrix} = 36 - (-14) = \underline{50}$

② a. $\begin{pmatrix} 3 & -2 & 5 \\ 4 & 1 & 6 \\ -9 & 7 & 8 \end{pmatrix} = 3\begin{pmatrix} 1 & 6 \\ 7 & 8 \end{pmatrix} + 2\begin{pmatrix} 4 & 6 \\ -9 & 8 \end{pmatrix} + 5\begin{pmatrix} 4 & 1 \\ -9 & 7 \end{pmatrix}$

$= 3(8-42) + 2(32+54) + 5(28+9)$

$= 3(-34) + 2(86) + 5(37)$

$= -102 + 172 + 185$

$= \underline{255}$

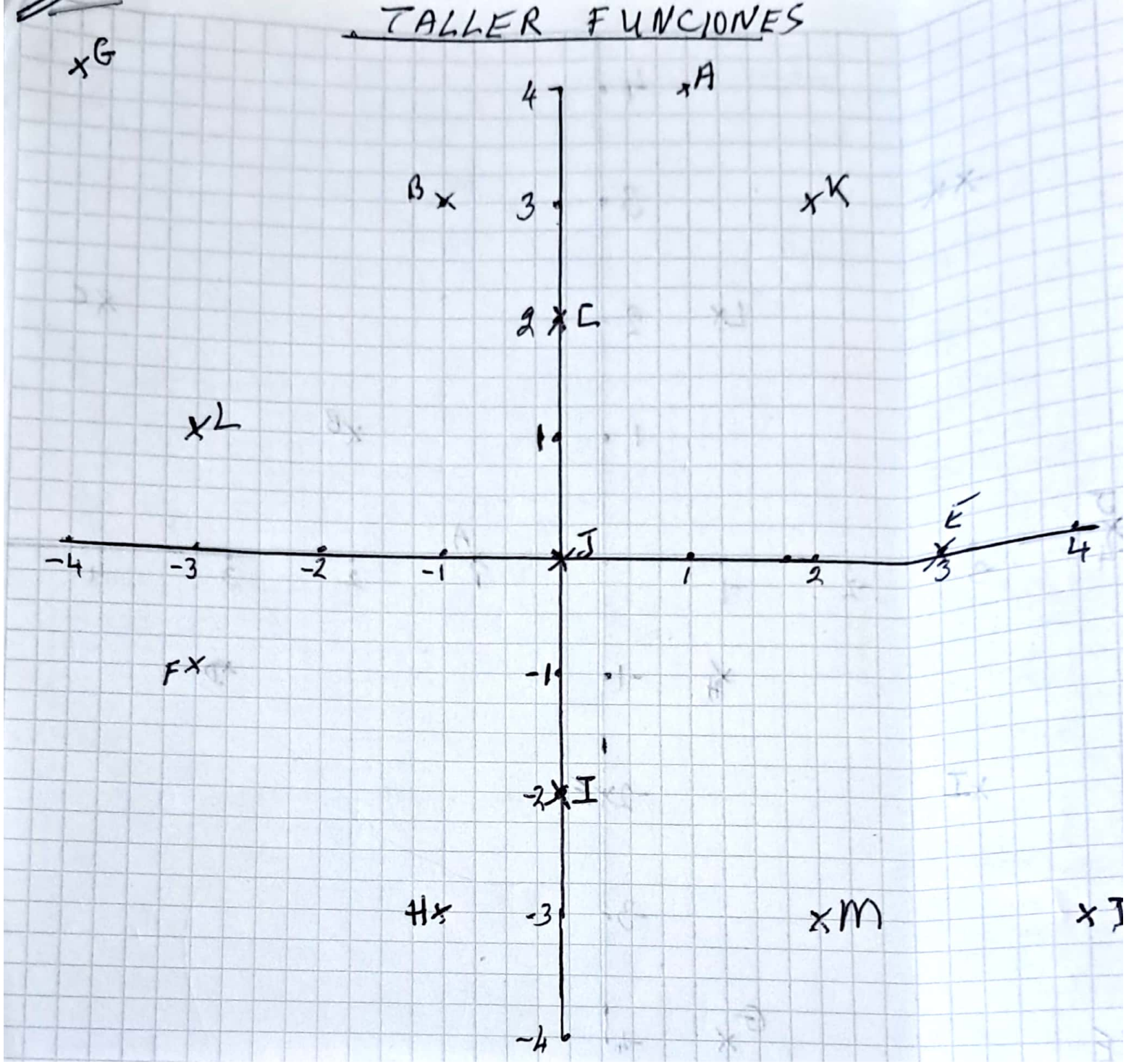
b. $\begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix} = 1\begin{pmatrix} 5 & 6 \\ 8 & 9 \end{pmatrix} - 2\begin{pmatrix} 4 & 6 \\ 7 & 9 \end{pmatrix} + 3\begin{pmatrix} 4 & 5 \\ 7 & 8 \end{pmatrix}$

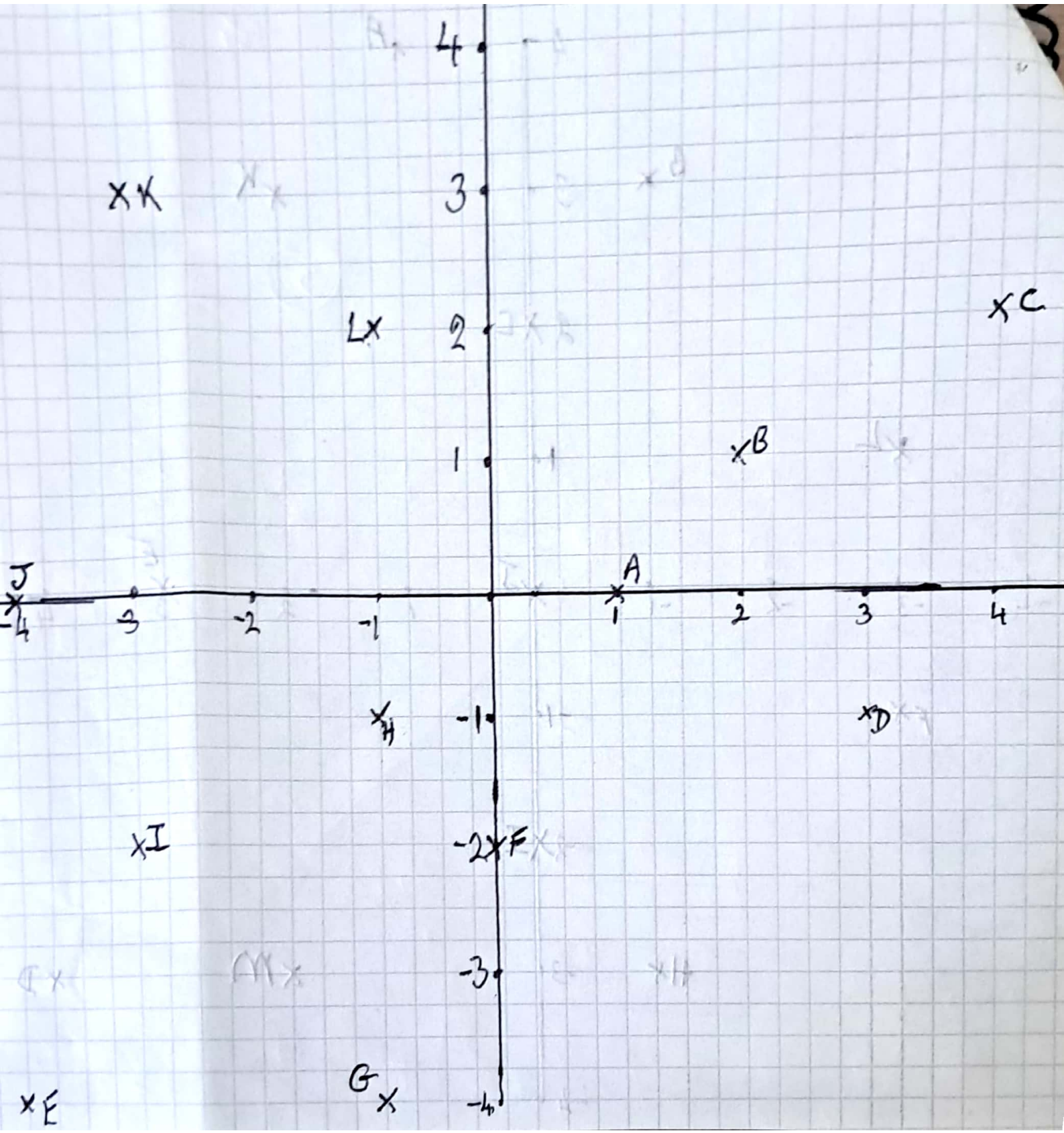
$= 1(45-48) - 2(36-42) + 3(32-35)$

$= -3 + 12 - 9$

$= \underline{0}$

TALLER FUNCIONES





Taller Trigonometria

① Sen $x = 3/4 = 0.75$ cos $x = 8/4 = 2$ (imposible)
Tan $x = 3/8 = 0.375$ Cotag $x = 8/3 = 2.\overline{6}$
Sec $x = 4/8 = 0.5$ Csec $x = 4/3 = 1,\overline{3}$

② Sen $x = 5/9 = 0,\overline{5}$ cos $x = 2/9 = 0,\overline{2}$
Tan $x = 5/2 = 2,5$ cotag $x = 2/5 = 0,4$
Sec $x = 9/2 = 4.5$ Csec $x = 9/5 = 1.8$

③ Sen $x = 10/12 = 0.8\overline{3}$ cos $x = 4/12 = 0.\overline{3}$
Tan $x = 10/4 = 2,5$ cotag $x = 4/10 = 0,4$
Sec $x = 12/4 = 3$ Csec $x = 12/10 = 1.2$

④ Sen $x = 7/15 = 0,4\overline{6}$ cos $x = 9/15 = 0,6$
Tan $x = 7/9 = 0,\overline{7}$ cotag $x = 9/7 = 1.28$
Sec $x = 15/9 = 1,\overline{6}$ Csec $x = 15/7 = 2,14$

⑤ Sen $x = 4/7 = 0,57$ cos $x = 5/7 = 0,71$
Tan $x = 4/5 = 0,8$ Cotag $x = 5/4 = 1.25$
Sec $x = 7/5 = 1.4$ C Sec $x = 7/4 = 1.75$

⑥ Sen $x = 6/11 = 0.\overline{54}$ cos $x = 8/11 = 0,7\overline{2}$
Tan $x = 6/8 = 0.75$ cotag $x = 8/6 = 1,\overline{3}$
Sec $x = 11/8 = 1,375$ Csec $x = 11/6 = 1,8\overline{3}$