

$$12) a) (+10) \cdot (-2) = -20$$

$$b) (-4) \cdot (-9) = +36$$

$$c) (-7) \cdot (+5) = -35$$

$$d) (+11) \cdot (+7) = +77$$

●	+	·	+	=	+
●	+	·	-	=	-
●	-	·	+	=	-
●	-	·	-	=	+

$$13) a) (-2) \cdot (-3) \cdot (+4) = (+6) \cdot (+4) = +24$$

$$b) (-1) \cdot (+2) \cdot (-5) = (-2) \cdot (-5) = +10$$

$$c) (+4) \cdot (-3) \cdot (+2) = (-12) \cdot (+2) = -24$$

$$d) (-6) \cdot (-2) \cdot (-5) = (+12) \cdot (-5) = -60$$

$$14) a) (-18) : (+3) = -6$$

$$b) (-15) : (-5) = +3$$

$$c) (+36) : (-9) = -4$$

$$d) (-30) : (-10) = +3$$

$$e) (-52) : (+13) = -4$$

$$f) (+22) : (+11) = +2$$

+	·	+	=	+
+	·	-	=	-
-	·	+	=	-
-	·	-	=	+

16) Completa y compara

$$(+60) : [(-30) : (-2)] = (+60) : [+15] =$$

$$= +4$$

$$[(+60) : (-30)] : (-2) = [-2] : (-2) = +1$$

SÍMOR NΔS!

17)

$$a) (-28) : [(+12) : (-3)] = (-28) : (-4) =$$

$$= +7$$

$$b) [(-45) : (+3)] : (+5) = (-15) : (+5) = -3$$

$$c) (-100) : [(-36) : (-9)] = (-100) : (+4) = -25$$

$$d) [(-72) : (+9)] : (-8) = (-8) : (-8) = +1$$

PAG 29

18.- Calcula

$$a) [(+5) \cdot (-8)] : [(-2) \cdot (-5)] =$$

$$[-40] : [+10] = -4$$

$$b) [(+28) : (-7)] \cdot [(+20) : (-4)] =$$

Pag 29

~~P~~ 20 ♀

19.-

$$a) 18 - 5 \cdot 3 = 18 - 15 = 3$$

$$b) 6 - 4 \cdot 2 = 6 - 8 = -2$$

$$c) 7 \cdot 2 - 16 = 14 - 16 = -2$$

P-29

20.- Calcular.

$$a) 18 - 15 : 3 = 18 - 5 = 13$$

$$b) 3 - 30 : 6 = 3 - 5 = -2$$

$$c) 20 : 2 - 11 = 10 - 11 = -1$$

CARLOS

Pag 29-

21 Calcular como en el ejemplo

$$a) 20 - 4 \cdot 7 + 11 = 20 - 28 + 11 = 31 - 28 = 3$$

$$b) 12 - 6 \cdot 5 + 4 \cdot 2 = 12 - 30 + 8 = 20 - 30 = -10$$

Piltrafas

$$e) 5 \cdot 3 - 4 \cdot 4 + 2 \cdot 6 = 15 - 16 + 12 = 27 - 16 = +11$$

$$f) 7 \cdot 3 - 5 \cdot 4 + 18 : 6 = 21 - 20 + 3 = 24 - 20 = 4$$

25)

$$a) 15 + 2 [8 - 3 \cdot 5] = 15 + 2 [8 - 15] = 15 + 2 \cdot [-7] = 15 - 14 = 1$$

$$b) (-3) \cdot (+5) - 3 \cdot [11 + 3 \cdot (5 - 11)] = -15 - 3 \cdot [11 + 3 \cdot (-6)] = -15 - 3 \cdot [11 + (-18)] = -15 - 3 \cdot [-7] = -15 + 21 = +6$$

$$c) 28 : (-7) - (-6) \cdot [23 - 5 \cdot (9 - 4)] = -4 - (-6) \cdot [23 - 5 \cdot 5] = -4 - (-6) \cdot [23 - 25] = -4 - (-6) \cdot (-2) = -4 - (+12) = -4 - 12 = 16$$

$$d) (-2) \cdot (7 - 11) - [12 - (6 - 8)] : (-7) =$$


$$+ 8 - [14](-7) =$$

$$+ 8 - (-2) = +10.$$

$$e) [18 + 5 \cdot (6 - 9)] - [3 - 16 : (5 + 3)] =$$

PG 30

26 | Escribe en forma de potencia

$$a) (-2) \cdot (-2) = (-2)^2$$

$$b) (+5) \cdot (+5) \cdot (+5) = (+5)^3 = 5^3$$

$$c) (-4) \cdot (-4) \cdot (-4) \cdot (-4) = (-4)^4$$

$$d) (-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2) = (-2)^6$$

26 ad 31

<u>27</u>	POT	BASE	EXPONENTE	VALOR
	$(-1)^7$	-1	7	$(-1) \cdot (-1) \cdot (-1) \dots (-1) = -1$
	$(-2)^4$	-2	4	+16.

28) Escribe en forma de producto y calcula:

$$a) (-2)^6 = (-2)(-2)(-2)(-2)(-2)(-2) = +64$$

↓
porque el exponente es par.

$$b) (-3)^1 = -3$$

$$c) (+3)^4 = (+3) \cdot (+3) \cdot (+3) \cdot (+3) = +81$$

$$d) (-5)^2 = (-5) \cdot (-5) = +25$$

$$e) (-10)^5 = (-10) \cdot (-10) \cdot (-10) \cdot (-10) \cdot (-10) = -100000$$

$$f) (-8)^3 = (-8) \cdot (-8) \cdot (-8) = -512.$$

$$29) a) 8^6 = 262128$$

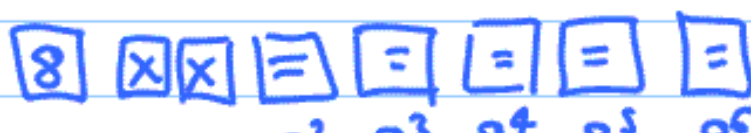
$$b) -8^6 = \text{" "}$$

$$c) 11^5 = \underline{161051}$$

$$d) (-11)^5 = -161051$$

$$e) 27^7 = 10460353203$$

$$f) -27^7 = -10460353203$$



30) Calcula el valor de x.

a) $(-2)^x = +16 \rightarrow x=4$ p.q. $(-2)^4 = 16$.

b) $(-3)^x = -27 \rightarrow x=3$ p.q. $(-3)^3 = -27$

c) $(+6)^x = 36 \rightarrow x=2$ p.q. $(+6)^2 = 36$

d) $(-5)^x = -125 \rightarrow x=3$ p.q. $(-5)^3 = -125$

e) $(-10)^x = 10\,000 \rightarrow x=4$ p.q. $(-10)^4 = 10\,000$.

f) $(-10)^x = -10 \rightarrow x=1$.

31) ... el valor o los valores de x...

a) $x^2 = +4 \rightarrow \begin{cases} x = +2 \\ x = -2 \end{cases} \quad (x = \pm 2)$

b) $x^3 = -64 \rightarrow x = -4$

c) $x^6 = +1 \rightarrow \begin{cases} x = +1 \\ x = -1 \end{cases}$

d) $x^7 = -1 \rightarrow x = -1$

e) $x^4 = 2401 \rightarrow \begin{cases} x = +7 \\ x = -7 \end{cases}$

f) $x^5 = -100\,000 \rightarrow x = -10$.

SI EL EXPONENTE ES
PAR Y EL VALOR POSITIVO

↓
DOS SOLUCIONES

SI EL EXPONENTE IMPAR
Y EL VALOR NEGATIVO

↓
1 SOLUCIÓN

32) CALCULA:

$\sqrt[2]{(-10)^2} = +10$

$$c) (-5)^2 - (-2)^4 + (-1)^6 = 25 - (+16) + (+1) =$$

$$(-2)^2 = 10$$

$$d) (+4)^3 : (-2)^4 + (+9)^2 : (-3)^3 =$$

PROPS

$$\left[(-2)^2 \right]^3 : (-2)^4 + \left[(-3)^2 \right]^2 : (-3)^3 =$$

$$(-2)^{2 \cdot 3} : (-2)^4 + (-3)^{2 \cdot 2} : (-3)^3 =$$

PROPS

$$(-2)^6 : (-2)^4 + (-3)^4 : (-3)^3 =$$

$$(-2)^{6-4} + (-3)^{4-3} = (-2)^2 + (-3)^1 = 4 - 3 = 1$$

$$e) (+4)^2 \cdot [(-2)^3 + (-3)^2] : (-2)^3$$

$$(+4)^2 \cdot [-8 + 9] : (-2)^3 =$$

$$+4^2 \cdot 1 : (-2)^3 =$$

$$16 : (-8) = -2.$$

34 Expresa en una sola potencia:

$$9^4 : 3^4 = (3^2)^4 : 3^4 = 3^{2 \cdot 4} : 3^4 = 3^8 : 3^4 =$$

$$b) (+15)^3 : (-5)^3 = ((+15) : (-5))^3 = (-3)^3$$

$$c) (-20)^2 : (-4)^2 = ((-20) : (-4))^2 = (+5)^2$$

$$d) (-18)^4 : (-6)^4 = [(-18) : (-6)]^4 = (+3)^4$$

$$\boxed{36} \quad a) (-6)^3 \cdot (-6)^4 = (-6)^{\boxed{7}}$$

$$b) (+3)^6 \cdot (+3)^2 = (+3)^8$$

$$c) (-2)^8 \cdot (-2)^2 = (-2)^{10} = 2^{10}$$

$$d) (-5)^3 \cdot (-5)^2 = (-5)^5$$

$$\boxed{38} \quad a) X^7 : X^4 = X^{7-4} = X^3$$

$$b) m^5 : m^4 = m^1 = m$$

$$c) a^7 : a^2 = a^5$$

$$d) z^8 : z^3 = z^5$$

$$\boxed{40} \quad a) (-7)^8 : (-7)^5 = (-7)^3$$

$$b) 10^9 : (-10^4) = 10^9 : 10^4 = 10^5$$

$$\rightarrow b2) (-10^9) : 10^4 = (-10)^9 : (-10)^4 = (-10)^5$$

$$c) 10^4 \cdot (-10)^1 = (-10)^4 \cdot (-10)^1 = (-10)^5$$

$$10^4 = 10 \cdot 10 \cdot 10 \cdot 10 = 10\,000$$

$$(-10)^4 = \underbrace{(-10) \cdot (-10)}_{+} \cdot \underbrace{(-10) \cdot (-10)}_{+} = 10\,000$$

$$\boxed{42} \rightarrow (3^2)^4 = 3^{2 \cdot 4} = 3^8$$

$$b) [(-2)^4]^3 = (-2)^{12} = 2^{12}$$

$$c) [(+5)^2]^2 = 5^4$$

$$d) [(-6)^3]^5 = (-6)^{15}$$

$$\boxed{49} a) (x^5 \cdot x^2) : x^4 = x^7 : x^4 = x^3$$

$$b) m^7 : (m^2 \cdot m^3) = m^7 : m^5 = m^2$$

$$c) (a \cdot a^6) : (a^2 \cdot a^4) = a^7 : a^6 = a$$

$$d) (z^5 \cdot z^3) : (z^6 \cdot z^2) = z^8 : z^8 = \left. \begin{array}{l} z^0 \\ 1 \end{array} \right\} z^0$$

$$z^0 = 1, \quad 1^0 = 1$$

$$2^0 = 1$$

$$3^0 = 1$$

$$\boxed{45} a) (5^8 \cdot 5^4) : (5^2)^5 = 5^{12} : 5^{10} = 5^2 = 25$$

$$d) (+7)^8 \cdot 7^5 : (7^4)^3 = 7^{13} : 7^{12} = 7$$

$$\boxed{46} a) 15^4 : 5^4 = \left(\frac{15}{5}\right)^4 = 3^4 = 81$$

$$b) (-12)^3 : 6^3 = \left(\frac{-12}{6}\right)^3 = (-2)^3 = -8$$

$$c) (-20)^5 : (-2)^5 = \left(\frac{-20}{-2}\right)^5 = 10^5 = 100\,000.$$

$$d) 8^6 : (-2)^6 = \left(\frac{8}{-2}\right)^6 = (-4)^6 = 4^6 = 4096.$$

$$e) (6^3 \cdot 4^3) : (-8)^3 = \left(\frac{24}{-8}\right)^3 = (-3)^3 = -27$$

$$\boxed{47} a) 10^6 : (5^4 \cdot 2^4) = 10^6 : 10^4 = 10^2 = 100.$$

$$b) (-12)^7 : [(-3)^5 \cdot 4^5] = (-12)^7 : (-12)^5 = (-12)^2$$