

1. - Opera e reduce:

$$a) 2x^2 - 3x \cdot (2x^2 - 9x) + 2 \cdot (x^2 - 5x) = 2x^2 - 6x^3 + 27x^2 + 2x^2 - 10x = \boxed{-6x^3 + 31x^2 - 10x}$$

$$b) (x^2 - 3x + 2) \cdot (7x - 4) = x^2 \cdot (7x - 4) - 3x \cdot (7x - 4) + 2 \cdot (7x - 4) = 7x^3 - 4x^2 - 21x^2 + 12x + 14x - 8 = \boxed{7x^3 - 25x^2 + 26x - 8}$$

$$c) 3x \cdot (3 - x) + 4(x^2 - 3x) = 9x - 3x^2 + 4x^2 - 12x = \boxed{x^2 - 3x}$$

$$d) (x - 8) \cdot (x^2 - 3x + 1) = x^3 - 3x^2 + x - 8x^2 + 24x - 8 = \boxed{x^3 - 11x^2 + 25x - 8}$$

$$e) (24x^2 - 8x) : 4x = \frac{24x^2}{4x} - \frac{8x}{4x} = \boxed{6x - 2}$$

2. - Indica se as igualdades son correctas, as incorrectas, corríxeas.

a)  $3a + a = 4a^2$  INCORRECTA,  $3a + a = \boxed{4a}$

b)  $5x + x + x = \boxed{7x}$  CORRECTA

c)  $x^2 + x^2 = x^4$  INCORRECTA,  $x^2 + x^2 = \boxed{2x^2}$

d)  $2n^2 + 3n^2 - 5n^2 = \boxed{0}$  CORRECTA

e)  $3zy + 5yz = \boxed{8yz}$  CORRECTA. pois  $yz = zy$

f)  $5x^2 + 2x = 7x^3$  INCORRECTA. Non se pode facer a suma pois  $5x^2$  e  $2x$  non son monomios SEMELLANTES.

3. - Desarrolla utilizando as identidades notables:

$$a) (3x - 6)^2 = (3x)^2 + 6^2 - 2 \cdot 3x \cdot 6 = 9x^2 + 36 - 36x = \boxed{9x^2 - 36x + 36}$$

$$b) (7a + 2b)^2 = (7a)^2 + (2b)^2 + 2 \cdot 7a \cdot 2b = \boxed{49a^2 + 4b^2 + 28ab}$$

$$c) (1 + 3x^2) \cdot (1 - 3x^2) = 1^2 - (3x^2)^2 = \boxed{1 - 9x^4}$$

4.- Transforma en productos

$$a) x^2 - 6x + 9 = (x-3)^2 = (x-3) \cdot (x-3)$$

$$b) 25x^2 - 36 = (5x-6) \cdot (5x+6)$$

$$c) x^2 + 2xy + y^2 = (x+y)^2 = (x+y) \cdot (x+y)$$

5.- Sacar factor común e luego simplificar:

$$a) \frac{5x+5}{3x+3} = \frac{5 \cdot (x+1)}{3 \cdot (x+1)} = \boxed{\frac{5}{3}} \quad b) \frac{x^2-3x}{2x-6} = \frac{x \cdot (x-3)}{2 \cdot (x-3)} = \boxed{\frac{x}{2}}$$

$$c) \frac{x^2+x}{x^2-x} = \frac{x \cdot (x+1)}{x \cdot (x-1)} = \boxed{\frac{x+1}{x-1}}$$

6.- Factoriza e simplifica:

$$a) \frac{x^2-16}{x^2+8x+16} = \frac{(x-4) \cdot (x+4)}{(x+4)^2} = \boxed{\frac{x-4}{x+4}}$$

$$b) \frac{x^2+xy}{xy+y^2} = \frac{x \cdot (x+y)}{y \cdot (x+y)} = \boxed{\frac{x}{y}}$$

$$c) \frac{14x+21y}{50x+75y} = \frac{7 \cdot (2x+3y)}{25 \cdot (2x+3y)} = \boxed{\frac{7}{25}}$$

7A.- Resuelve las siguientes ecuaciones de 1º grado:

$$a) 13x - 5(x+2) = 4 \cdot (2x-1) + 7$$

$$13x - 5x - 10 = 8x - 4 + 7$$

$$13x - 5x - 8x = -4 + 7 + 10$$

$$13x - 13x = 13$$

$$\boxed{0 = 13} \leftarrow \text{ABSURDO} \Rightarrow \text{A ecuación non ten solución.}$$

$$b) 3x + 5(2x-1) = 8 - 3(4-5x)$$

$$3x + 10x - 5 = 8 - 12 + 15x$$

$$3x + 10x - 15x = 8 - 12 + 5$$

$$-2x = 1$$

$$x = \frac{1}{-2} = \boxed{-\frac{1}{2}} \leftarrow \text{Solución}$$

c)  $\frac{2x+4}{4} - 2(x-3) = 5 - \frac{7x}{2}$  Multiplicamos a igualdad polo mcm dos denominadores.  
mcm

4.  $\left(\frac{2x+4}{4} - 2(x-3)\right) = \left(5 - \frac{7x}{2}\right) \cdot 4$

$2x+4 - 8(x-3) = 20 - 14x$

$2x+4 - 8x+24 = 20 - 14x$

$2x - 8x + 14x = 20 - 4 - 24$

$8x = -8$   
 $x = \frac{-8}{8} = \boxed{-1}$  ← Solución

d)  $\frac{2x-1}{3} - \frac{5x-4}{7} = \frac{x+5}{2} - 5$  mcm (3,7,2) = 3·7·2 = 42

$42 \cdot \left(\frac{2x-1}{3} - \frac{5x-4}{7}\right) = \left(\frac{x+5}{2} - 5\right) \cdot 42$

$14(2x-1) - 6(5x-4) = 21(x+5) - 210$

$28x - 14 - 30x + 24 = 21x + 105 - 210$

$28x - 30x - 21x = 105 - 210 + 14 - 24$

$-23x = -115$   
 $x = \frac{-115}{-23} = \boxed{5}$  ← Solución

7(2) - Indica se son completas ou incompletas e resólvelas:

a)  $3x^2 + 2x = 8 \rightarrow 3x^2 + 2x - 8 = 0$  COMPLETA  $a=3, b=2, c=-8$

$x = \frac{-b \pm \sqrt{b^2 - 4 \cdot a \cdot c}}{2 \cdot a} = \frac{-2 \pm \sqrt{2^2 - 4 \cdot 3 \cdot (-8)}}{2 \cdot 3} = \frac{-2 \pm \sqrt{4 + 96}}{6}$

$= \frac{-2 \pm \sqrt{100}}{6} = \frac{-2 \pm 10}{6}$   
 $x_1 = \frac{-2+10}{6} = \frac{8}{6} = \boxed{\frac{4}{3}}$   
 $x_2 = \frac{-2-10}{6} = \frac{-12}{6} = \boxed{-2}$  Soluciones.

b)  $(x-5) \cdot (x+1) + 5 = 0 ; x^2 + x - 5x - 5 + 5 = 0 \rightarrow x^2 - 4x = 0$

é INCOMPLETA  $c=0, a=1, b=-4 \rightarrow x \cdot (x-4) = 0 \rightarrow$

$\boxed{x_1 = 0}$   
 $x - 4 = 0 \rightarrow \boxed{x_2 = 4}$  Soluciones

Un produto de 2 nos da cero, só se é cero algún deles.

