SOL HW 3.11

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Name:_____ Date:_____

Math 8Honours: HW 3.11 Factoring and Solving Trinomials

1. Given each pair of binomials, expand and simplify:

a. $(x-3)(x+4)$ b. $(x+11)(x-9)$ c. $(2x+3)(3x-1)$

e. $(7x-3)(4x+2)$ f. $(10x-3)(4x-2)$ g. $(8x-3)(3x-8)$

2. Given each pair of binomials, solve for "x":

a. $(x+9)(x+21)=0$ b. $4(x-3)(x+3)=0$ c. $(x+81)(x-29)=0$

e. $(2x-5)\left(x-\frac{1}{2}\right)=0$ f. $x(3x+1)=0$ g. $2(5-2x)\left(\frac{1}{3}-x\right)=0$

3. Given each expression, find the missing value in the box:

a. $x^2-11x-12=\left(x-\boxed{?}\right)(x+1)$ b. $x^2-29x+120=\left(x-\boxed{?}\right)(x-5)$

c. $5x^2+6x+1=\left(5x+\boxed{?}\right)(x+1)$ d. $2x^2-23x+11=\left(2x-\boxed{?}\right)(x-11)$

4. Factor each of the following expressions. Show all your steps and work:

a. x^2+7x+6 b. $x^2+25x+24$ c. $x^2+10x+21$ d. $x^2-10x+24$

e. $x^2+3x-40$ f. $4x^2+9x+2$ g. $2x^2+5x+2$ h. $2x^2-11x+15$

i) $21x^2+17x-30$ j) $2x^2-7x+5$ k) $5x^2-13x-6$ L) $7x^2+9x-10$

m) $21+26x-15x^2$ n) $2x^2-9xy-45y^2$ o) $5x^4-9x^2-2$ p) $6-7x^2+2x^4$

5. Factor each of the following expressions and solve for "x". Show all your steps and work:

a. $x^2+8x+12=0$ b. $x^2+17x+72=0$ c. $x^2+2x-15=0$ d. $x^2-7x-170=0$

e. $x^2 - 64 = 0$

f. $100 - x^2 = 0$

g. $(2x-1)^2 - 16 = 0$

h. $2x^2 - 11x + 15 = 0$

i) $13x^2 + 8x - 5 = 0$

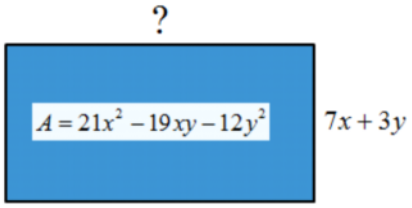
j) $2x^2 - 25x - 13 = 0$

k) $2x^2 - 7x + 6 = 0$

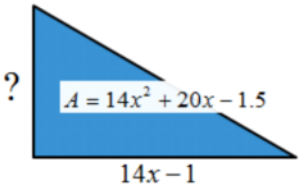
L) $10x^2 + 49x + 49 = 0$

m) $(x+2)^2 + 8(x+2) - 20 = 0$	n) $(x-3)^2 + 10(x-3) + 9 = 0$	o) $2(x+1)^2 - (x+1) - 6 = 0$
p) $4(x+2)^2 = 6 - 5(x+2)$	o) $x^4 - 256 = 0$	q) $x^4 = 10 - 9x^2$
r) $r^4 - 17r^2 + 16 = 0$	s) $x^4 - 29x^2 + 100 = 0$	t) $4(x^2 - 6x + 9)^2 - 12(x^2 - 6x + 9) = -9$

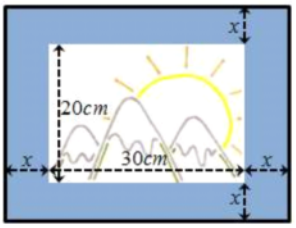
6. The area of a rectangle is given by the expression: $21x^2 - 19xy - 12y^2$ and the width is $7x + 3y$. Find the length of the rectangle:



7. The area of a triangle is given by the expression: $14x^2 + 20x - 1.5$ and the width is $14x - 1$. Find the length of the rectangle:



8. A photograph that is 20cm by 30cm is framed with a uniform mat board as shown below. If the area of the photo with the mat is 999cm^2, then what is the width of the mat?



9. Find the length of the base for the following triangle: