Remember the short cuts….. Refer to guided notes titled "Special Products"

Find each product: SHOW NO WORK

1) $(a - 3)(a + 3)$ a^2-b^2

a^2-9

2) $(6y - 7)(6y + 7)$ a^2-b^2

$36y^2-49$

3) $(h + 7)^2$ $a^2+2ab+b^2$

$h^2+14h+49$

4) $(b - 6)(b - 6)$ $a^2-2ab+b^2$

$b^2-12b+36$

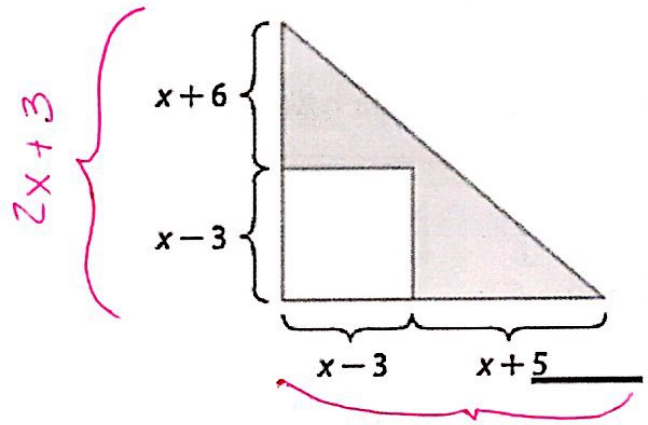
5) $(2b + 3)^2$ $a^2+2ab+b^2$

$4b^2+12b+9$

6) $(5t - 2)^2$ $a^2-2ab+b^2$

$25t^2-20t+4$

Find the area of the shaded region:



$2x+2$

$\frac{1}{2}(2x+3)(2x+2)$

$(1x+1.5)(2x+2)$

$2x^2+2x+3x+3$

$2x^2+5x+3$

whole triangle

Square $a^2-2ab+b^2$

$(x-3)^2$

x^2-6x+9

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

$x^2+11x-6$

$gh(10gh+9h-g)$

Factor the following:

1) $10g^2h^2 + 9gh^2 - g^2h$

$10g^2h^2 = 5 \cdot 2 \cdot h \cdot h \cdot g \cdot g$

$9gh^2 = 3 \cdot 3 \cdot g \cdot h \cdot h$

$g^2h = 1 \cdot g \cdot g \cdot h$

GCF = gh

$gh(10gh) + gh(9h) + gh(g)$

2) $12jk^2 + 6j^2k + 2j^2k^2$

$12jk^2 = 3 \cdot 2 \cdot 2 \cdot j \cdot k \cdot k$

$6j^2k = 3 \cdot 2 \cdot j \cdot j \cdot k$

$2j^2k^2 = 2 \cdot j \cdot j \cdot k \cdot k$

GCF: $2jk$

$2jk(6k) + 2jk(3j) + 2jk(jk)$

$2jk(6k + 3j + jk)$

3) $np + 2n + 8p + 16$

$n(p+2) + 8(p+2)$

$(n+8)(p+2)$

4) $9fg - 45f - 7g + 35$

$9f(g-5) - 7(g-5)$

$(9f-7)(g-5)$

Solve each equation:

5) $3k(k + 10) = 0$

$\frac{3k}{3} = \frac{0}{3}$

$k = 0$

$k + 10 = 0$

$k = -10$

6) $20p^2 - 15p = 0$

$5p(4p - 3)$

$5p = 0$

$p = 0$

$4p - 3 = 0$

$4p = 3$

$p = \frac{3}{4}$

CCSS CRITIQUE Hernando and Rachel are solving $2m^2 = 4m$. Is either of them correct? Explain your reasoning.

Hernando	Rachel
$2m^2 = 4m$	$2m^2 = 4m$
$\frac{2m^2}{m} = \frac{4m^2}{2m}$	$2m^2 - 4m = 0$
$2m = 2$	$2m(m - 2) = 0$
$m = 1$	$2m = 0$ or $m - 2 = 0$
	$m = 0$ or 2

She got the equation set to 0 first which is the correct 1st step.

Hernando skipped that step.

Factor the following quadratic equations:

1) $y^2 - 7y - 30$

MP	-7
-30	
-10, 3	-7

$(y-10)(y+3)$

2) $40 - 22x + x^2$ $\quad x^2 - 22x + 40$

40	-22
-20, -2	-22

$(x-20)(x-2)$

3) $3x^2 + 17x + 20$

60	17
12, 5	17

$3x^2 + 12x + 5x + 20$

$3x(x+4) + 5(x+4)$

$(3x+5)(x+4)$

4) $34x + 5x^2 + 24$

120	34
30, 4	34

$5x^2 + 34x + 24$

$5x^2 + 30x + 4x + 24$

$5x(x+6) + 4(x+6)$

$(5x+4)(x+6)$

5) $2x^2 + 3x + 6$

12	3

PRIME

Solve the following quadratic equations:

6) $2x^2 - 17x + 30 = 0$

60	-17
-12, -5	-17

$2x^2 - 12x - 5x + 30$

$2x(x-6) - 5(x-6)$

$(2x-5)(x-6)$

$2x - 5 = 0$

$\frac{2x}{2} = \frac{5}{2}$

$x = 2\frac{1}{2}$

$x - 6 = 0$

$x = 6$

7) $y^2 - 90 = 13y$

$y^2 - 13y - 90 = 0$

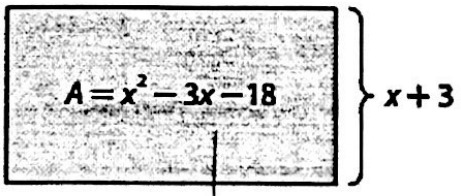
-90	-13
-18, 5	-13

$(y-18)(y+5)$

$y - 18 = 0$ $\quad y = 18$

$y + 5 = 0$ $\quad y = -5$

GEOMETRY Which expression represents the length of the rectangle?



F $x + 5$

G $x + 6$

H $x - 6$

J $x - 5$

-18	-3
-6, 3	-3

$(x-6)(x+3)$

Find each product:

1) $(4n + 3)(n + 9)$

$4n^2 + 36n + 3n + 27$

$4n^2 + 39n + 27$

2) $(2a + 9)(5a - 6)$

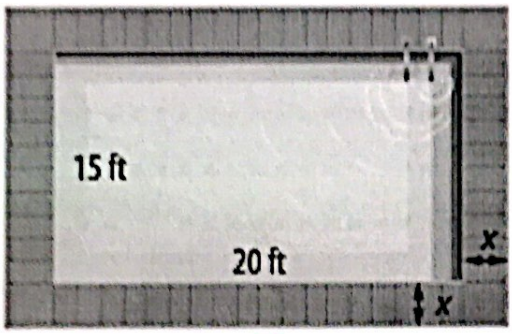
$10a^2 - 12a + 45a - 54$

$10a^2 + 33a - 54$

3) $(2a - 9)(3a^2 + 4a - 4)$

$6a^3 + 8a^2 - 8a - 27a^2 - 36a + 3$

$6a^3 - 19a^2 - 44a + 36$



$15 + 2x$

$20 + 2x$

A contractor is building a deck around a rectangular swimming pool. The deck is x feet from every side of the pool. Write an expression for the total area of the pool and deck.

$(15 + 2x)(20 + 2x)$

$300 + 30x + 40x + 4x^2$

$4x^2 + 70x + 300$