Name: _____ Date: _____

Section 5.3 Factor Trinomials of the Form $x^2 + bx + c$

1. Find two numbers that have the given product and sum.

	Product	Sum
a)	21	10
b)	12	7
c)	–12	–4
d)	40	–13
e)	30	11
f)	18	–9
g)	20	9
h)	48	–14

2. Factor. Check by expanding.

a) $x^2 + 12x + 32$
b) $x^2 - 9x + 18$
c) $x^2 - 2x - 3$
d) $x^2 - 12x + 35$

3. Factor each trinomial.

a) $x^2 - 3x - 18$
b) $x^2 + 2x + 1$
c) $x^2 - x - 56$
d) $x^2 + 15x + 54$
e) $x^2 + x - 56$
f) $x^2 - 12x - 45$

4. Model each trinomial with algebra tiles. Factor each expression.

a) $x^2 + 4x + 3$
b) $x^2 + 8x + 16$
c) $x^2 + 5x + 6$
d) $x^2 + 9x + 8$

5. Factor.

a) $x^2 + 8x$
b) $x^2 - 16x$
c) $x^2 + 0.5x$
d) $x^2 - 28x$

6. Factor, then check by expanding,

a) $x^2 - 9$
b) $x^2 - 16$
c) $x^2 - 36$
d) $x^2 - 4$
e) $x^2 - 225$
f) $x^2 - 81$

7. Factor.

a) $x^2 + 36x$
b) $x^2 + 10x + 100$
c) $x^2 - 100$
d) $x^2 - x - 72$
e) $x^2 + 12x + 32$
f) $x^2 + 50x$
g) $x^2 - 121$
h) $x^2 - 16$

8. Factor, if possible.

a) $x^2 + 4x - 21$
b) $x^2 + 6x + 4$
c) $x^2 + 10x + 25$
d) $x^2 - 6x + 7$
e) $x^2 - 6x - 7$
f) $x^2 + 36$

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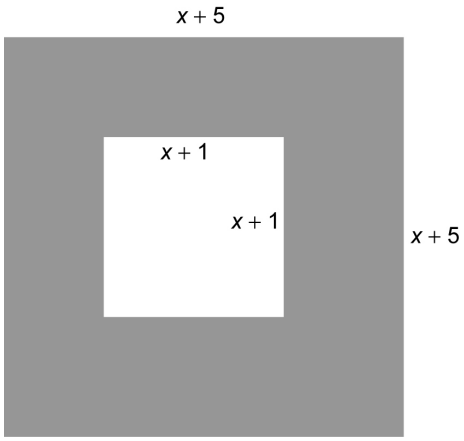
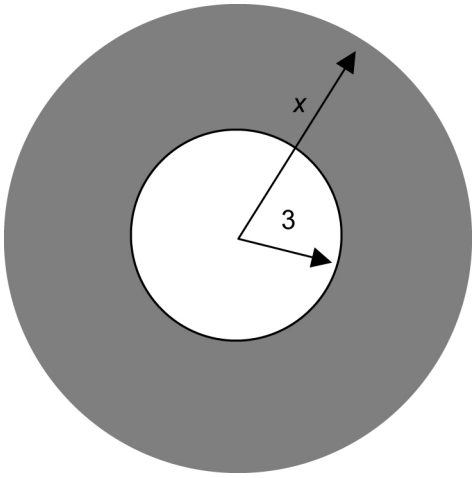
9. Find an expression, in factored form, for the shaded region of each figure.

a)

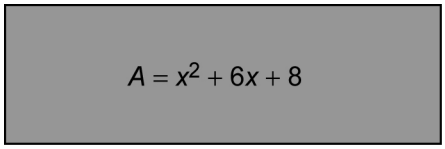


b)

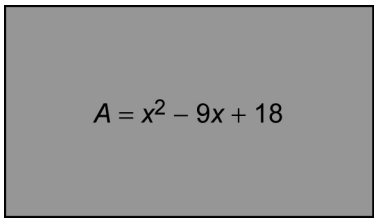


10. Write expressions to represent the length and width of each rectangle. Then, determine the dimensions of the rectangle if $x = 10$ cm.

a)



b)



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