from 3.3 (part A)

#6. $(-4x + 4x^3 + 7) + (3x^2 - 9 - 3x)$

$\quad = 7x^3 - 7x - 2$

#14. $(5x^3 + 3x^2 + 5) - (7x^3 - 9x^2 + 8x - 5)$

$\quad = 5x^3 + 3x^2 + 5 - 7x^3 + 9x^2 - 8x + 5$

$\quad = -2x^3 + 12x^2 - 8x + 10$

#22. $-4x^2y \cdot (x^2 + 7xy - 6y^3)$

$\quad = -4x^4y - 28x^3y^2 + 24x^2y^4$

#34. $(2x - 5)(5x^2 + 4x + 7)$

$\quad = 10x^3 + 8x^2 + 14x - 25x^2 - 20x - 35$

$\quad = 10x^3 - 17x^2 - 6x - 35$

p 186 # 12, 14-19, 21, 15*

#17.

$(5x+8)$

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

$A_{blue} = A_{big} - A_{small}$

$\quad = [(5x+8)(6x+2)] - [(3x)(x+5)]$

$\quad = [30x^2 + 10x + 48x + 16] - [3x^2 + 15x]$

$\quad = 30x^2 + 58x + 16 - 3x^2 - 15x$

$\quad = 27x^2 + 43x + 16$

3.3 Common Factors of Polynomials (part 2)

*To factor a polynomial with algebra tiles, you must form a complete rectangle with all the tiles and measure the lengths of the sides.
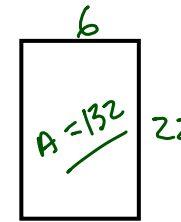
ex. $3x + 6$

try $132 = 2 \cdot 2 \cdot 3 \cdot 11$

2 66
  2 33
    3 11

ex. $2x^2 + 8x$

$\therefore 132 = 2(66)$
$= 4(33)$
$132 = 2(40+26) = 11(12)$
$= 6(22)$

6

$A = 132$ 22
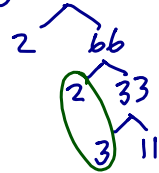
*To factor algebraically, divide each term by a common factor. This factor is then written in front of the polynomial.

ex. $3x + 6$
$= 3(x + 2)$

ex. $-5x^2 - 25x + 10$
$= -5(x^2 + 5x - 2)$

ex. $2x^2 + 8x$
$= 2x(x + 4)$

ex. $3x^2y - 36xy^2 + 18xy$
$= 3xy(x - 12y + 6)$

*you can always check by distribution!

ex. The formula for the area of a cylinder is $A = 2\pi r^2 + 2\pi rh$. Factor this expression completely and determine the area of a cylinder with a radius of 3cm and a vertical height of 5 cm.

$A = 2\pi r^2 + 2\pi r h$
$A = 2\pi r(r + h)$

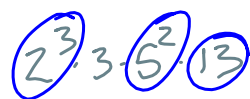$r = 3$ and $h = 5$

$A = 2\pi(3)[(3) + (5)]$
$= 2\pi(3)(8)$
$= 48\pi \ cm^2$ exact value

$A \doteq 150.8 \ cm^2$

not 11

Homefun: Pg. 155 #9-12, 14-22, not 11

$+ \ p \ 149 \ \# \ 1-10 \ (ace)$

$2^3 \cdot 3 \cdot 5^2 \cdot 13$ $2^2 \cdot 3^3 \cdot 5 \cdot 11$

$GCF = 2^2 \cdot 3 \cdot 5 = 60$
$LCM = 2^3 \cdot 3^3 \cdot 5^2 \cdot 11 \cdot 13 =$

$$5^2 \cdot 3^2 \cdot 2^6 = 14400$$

$$\therefore \sqrt{14400} = 5 \cdot 3 \cdot 2^3$$

$$= 120$$

$$2^6 \cdot 3^3 \cdot 5^3 = 216000$$

$$\sqrt[3]{216000} = 2^2 \cdot 3 \cdot 5$$

$$= 60$$

$$\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$$

$$= 2 \cdot 2 \cdot 2$$

$$\sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$$

$$= \sqrt[3]{64}$$

$$= 4$$

$$= 2^2$$

$$\text{or} \quad \sqrt[3]{2^6} = 2^2$$