Sec 4.3

11-613

Ex	Prob
1	11
2	17
3	53
4	27
5	35
6	41
7	47
8	45
9	61
10	read, 69

4.4

Ex

Proof

1 → 9

2 → 25, 31

3 → 35

4 → 37 (see 4.5)

FOIL

5 → 57

6 → 61

7 → 69

4.5

Ex

1, 2, 3, 4, 5

MOSTLY

FOIL

Proof

5, 9, 33, 39, 27

51, 57 (FOIL)

Ex 3

(11) $(7t^2 - 3t - 6) + (2t^2 + 4t + 9)$

t, $9t^2$, 3

$= 9t^2 + t + 3$

(12) $(3x^6 + 2x^4 - x^3 - 5x) + (-x^6 + 3x^3 - 4x^2 + 7x^4)$

$7x^4$, $2x^6$, $2x^3$

$= 2x^6 + 9x^4 + 2x^3 - 5x + 4x^2$

$= 2x^6 + 9x^4 + 2x^3 - 4x^2 - 5x$

(53)

$(x^3+3x^2+1)-(x^3+x^2-5)$

$2x^2$ $-x^3-x^2+5$

x^3+3x^2+1

0 6

$= 0+2x^2+6 = 2x^2+6$

(54) $-3t^3+4t^2-7$

$-(3t^3+4t^2-7)$

Ex 4 (i) (ii)

$3t^3-4t^2+7$ preference

Change Each sign

Example 4

4o3

(35o)

change signs

$$= -(-4x^4 + 6x^2 + \tfrac{3}{4}x - 8)$$

$$= 4x^4 - 6x^2 - \tfrac{3}{4}x + 8$$

Announcement

(E.C. 7.5, 7.6) Test 3 Nov 18th

← sec 7.7, CH 4

(4.) $(4a^2 + a - 7) - (3 - 8a^3 - 4a^2)$

$4a^2 + a - 7 - 3 + 8a^3 + 4a^2$

$8a^2$

$= 8a^3 + 8a^2 + a - 10$

(47.)

$(3+5a+3a^2-a^3)-(2+4a-9a^2+2a^3)$

$12a^2$

$3+5a+3a^2-a^3$

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

a

$-3a^3$

1

$= 1+a+12a^2-3a^3$

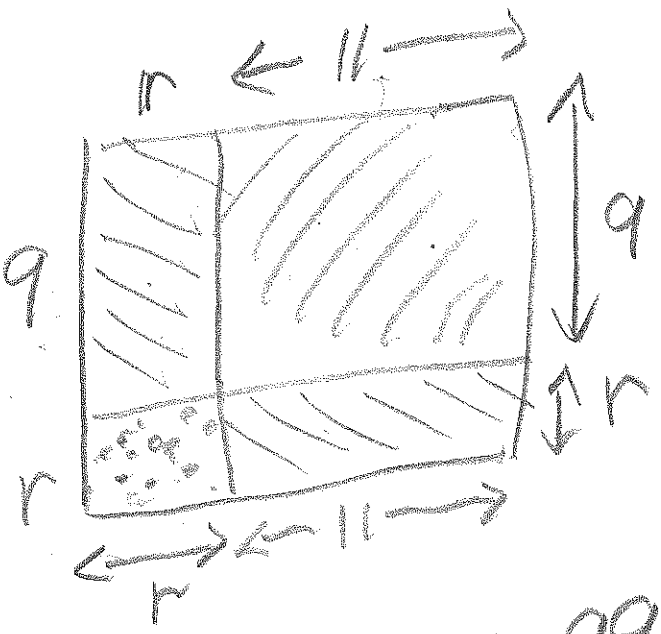
$= \boxed{-3a^3+12a^2+a+1}$

(45.) $(7x^3-2x^2+6)-(6-2x^2+7x^3)$

$7x^3-2x^2+6-6+2x^2-7x^3$

$= 0$ Aha!

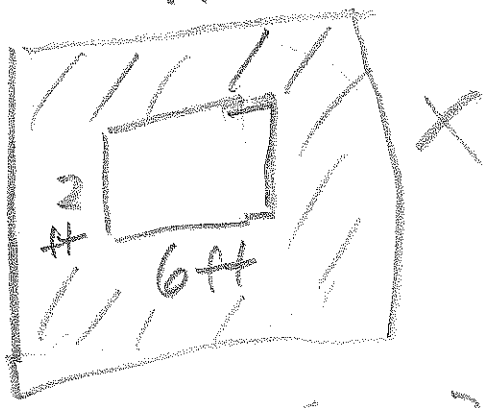
(61)



$$\text{Area} = 9r + 99 + 11r + r^2$$

$$= r^2 + 20r + 99$$

(69)



$$\text{area} = x \cdot x - 2\text{ft} \cdot 6\text{ft}$$

$$= x^2 - 12\text{ft}^2$$

4.4

(9) neg. pos

$(-x^3) \cdot (x^4)$

$= neg = -x^7$

$7 = 3 + 4$

Ex: $x^3 \cdot x^4 = x^{4+3} = x^7$

(25) $5x \cdot (4x + 1)$

$20x^2 + 5x \cdot 1$

$= 20x^2 + 5x$

(31) $-3n^1 \cdot (2n^2 - 8n^1 + 1)$

$= -6n^3 + 24n^2 - 3n \cdot 1$

(36) $-6m^3 + 24m^2 - 3m$

(35) $\frac{2}{3}a^4 \cdot \left(6a^5 - 12a^3 - \frac{15}{8}\right)$

$\frac{2}{3} \cdot 6 = \frac{12}{3} = 4$ → $4a^9 - 8a^7 - \frac{5}{12}a^4$

$\frac{2}{3} \cdot 12 = \frac{24}{3} = 8$

$\frac{2}{3} \cdot \frac{5}{8_4} = \frac{5}{12}$

(37) FOIL (see 4.5)

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

F: $x \cdot x = x^2$

O: $x \cdot 4 = 4x$

I: $3 \cdot x = 3x$

L: $3 \cdot 4 = 12$

$= x^2 + 4x + 3x + 12$

$= x^2 + 7x + 12$

57. $(x+3)(x+4)$

F O I L

$x^2 + 4x + 3x + 4 \cdot 3$

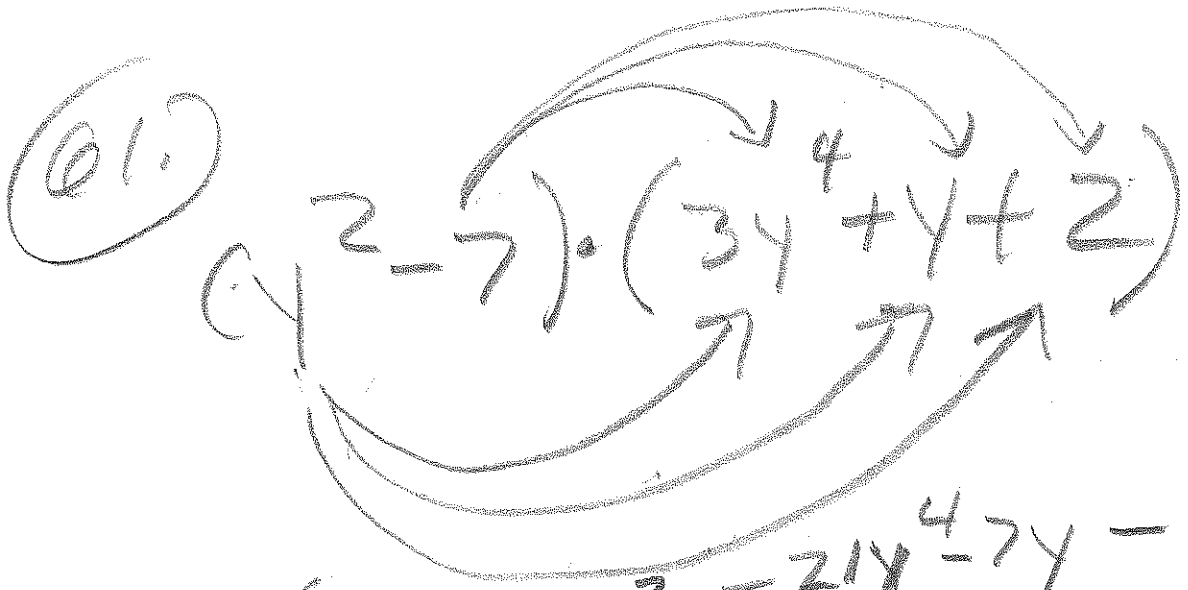
$= x^2 + 7x + 12$

58. $(x^2 - x + 3)(x+1)$ NOT FOIL

$x^3 + x^2 \cdot 1 - x^2 - x \cdot 1 + 3x + 3 \cdot 1$

$= x^3 + x^2 - x^2 - x + 3x + 3$

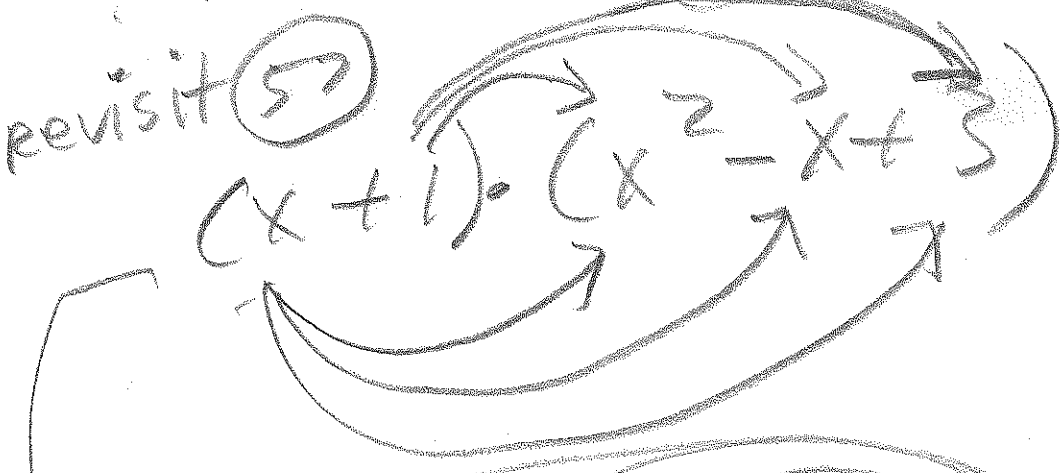
$= x^3 + 2x + 3$

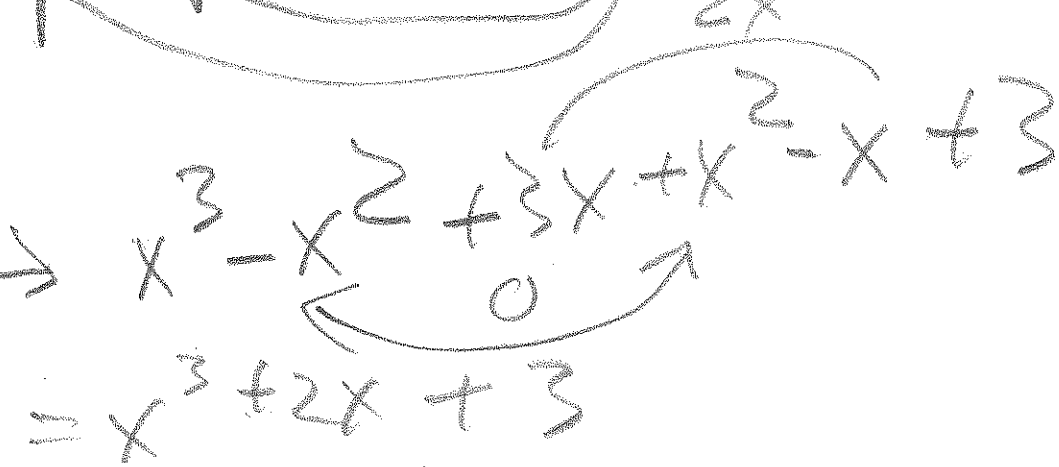


$= 3y^6 + y^3 + 2y^2 - 21y^4 - 7y - 14$

$= 3y^6 - 21y^4 + y^3 + 2y^2 - 7y - 14$

$14 \cdot y^0$
$= 14 \cdot 1$
$= 14$





69) $(x+1)\cdot(x^3+7x+5x+4)$

$$x^4 + 7x^3 + 5x^2 + 4x + x^3 + 7x^2 + 5x + 4$$

$$= x^4 + 8x^3 + 12x^2 + 9x + 4$$

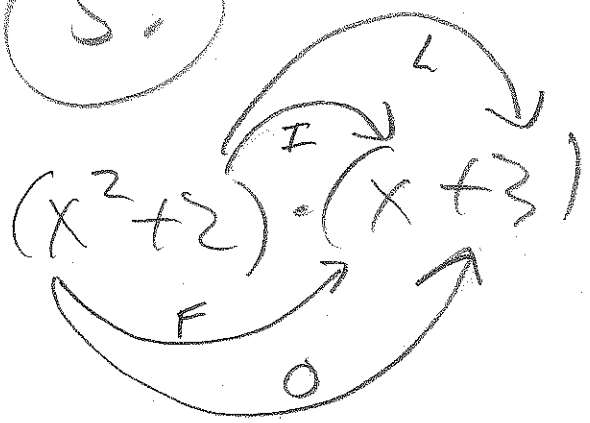
4.5

5, 9, 33, 39, 27, 51, 57

(FOIL FEST)

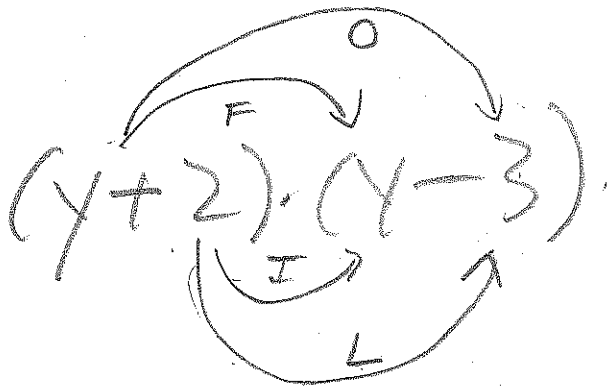
E.5

5.



$$= x^3 + 3x^2 + 2x + 6$$

9)

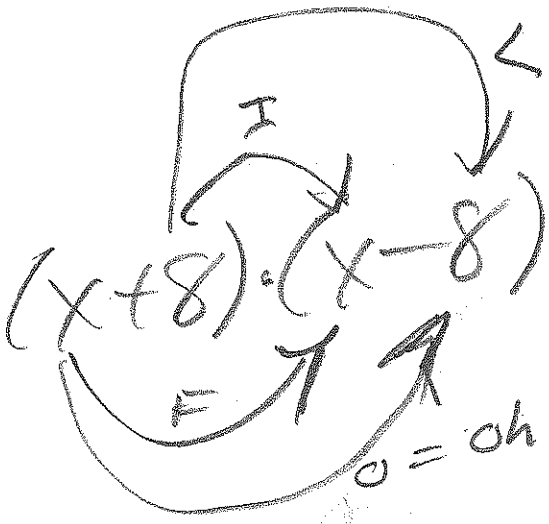


F O I L

$$y^2 - 3y + 2y - 6$$

$$= y^2 - y - 6$$

(39.)



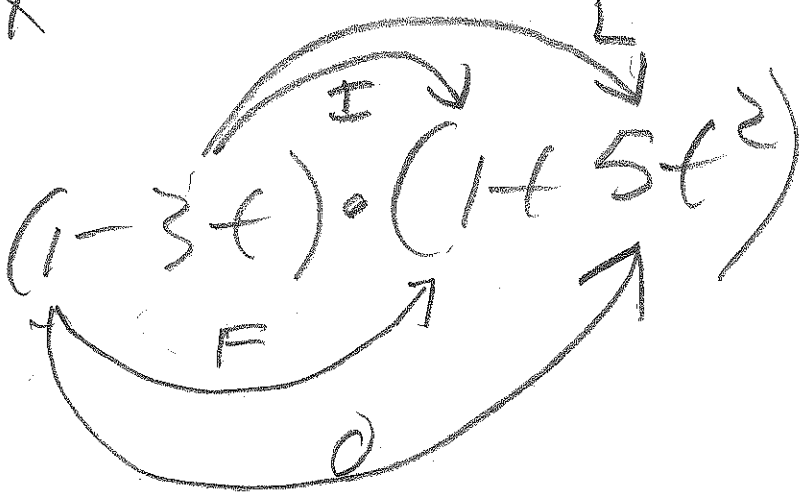
$O = oh$

$\emptyset = zero$

$= x^2 - 8x + 8x - 64$

$= x^2 - 64$

(27.)



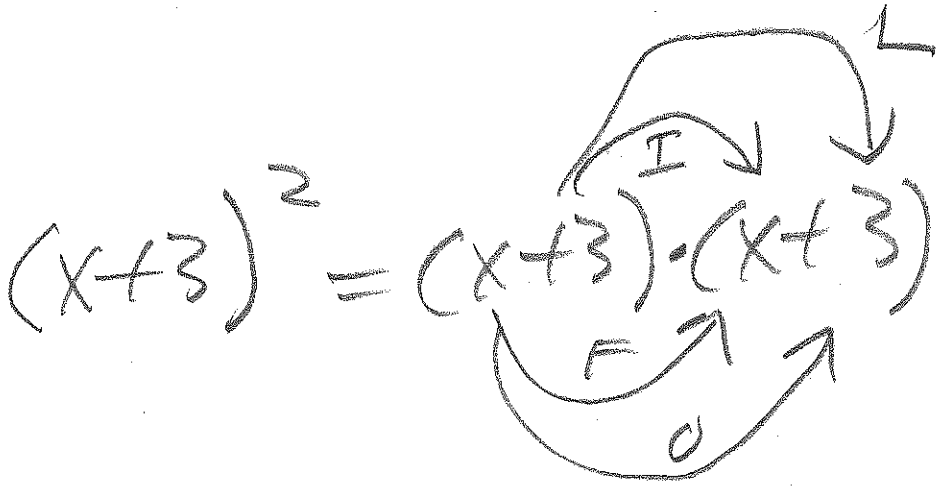
F O I L

$1 + 5t^2 - 3t - 15t^3$

$= -15t^3 + 5t^2 - 3t + 1$

57.

$$(x+3)^2 = (x+3)\cdot(x+3)$$



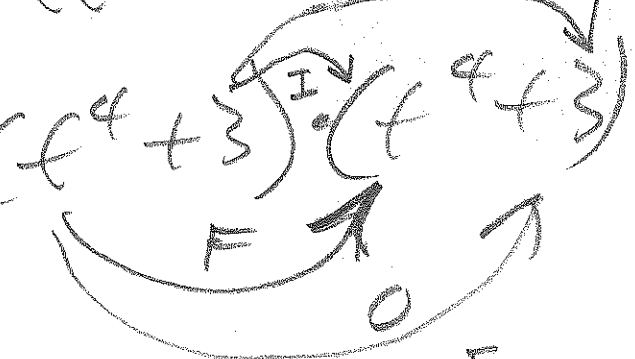
F O I L

$$= x^2 + 3x + 3x + 9$$

$$= x^2 + 6x + 9$$

57.) $(t^4+3)^2 = ?$

$$= (t^4+3)\cdot(t^4+3)$$



F O I L

$$t^8 + 3t^4 + 3t^4 + 9 = \boxed{t^8 + 6t^4 + 9}$$

Nice example!

$$(t^4+3)^3 = (t^4+3)(t^4+3)(t^4+3)$$

use FOIL

$$(t^8+6t^4+9)\cdot(t^4+3)$$

$$= t^{12}+6t^8+9t^4+3t^8+18t^4+27$$

$$= t^{12}+9t^8+27t^4+27$$

Quiz 9 = sec 4.3 to 4.5