

Name: _____
 Date: _____
 Class: _____

Algebra
 Unit 7
 HW 7-5

1) Factor: $7x^2 + 11x - 6$

dif signs
 -42

1	42
2	21
-3	14
6	7

$-3 + 14 = 11$

Total 11

$(7x-3)(x+2)$

2) Factor: $6x^2 + 5x - 4$

$x^2 + 5x - 24 \rightarrow$ dif signs
 -24

1	24
2	12
-3	8
4	6

$-3 + 8 = 5$

Total 5

$(2x-1)(3x+4)$

3) Factor: $6x^2 - 9x - 27$

GCF = 3

3 step $\rightarrow 2x^2 - 3x - 9$

$3(2x^2 - 3x - 9)$

$x^2 - 3x - 18$

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

$(2x+3)(x-3)$

$3(2x+3)(x-3)$

dif signs
 -18

1	18
2	9
3	-6

$3 + -6 = -3$

Total -3

4) Factor: $4x^3 - 48x^2 - 432x$

GCF $\rightarrow 4x$

$4x(x^2 - 12x - 108)$

dif signs
 -108

1	108
2	54
3	36
4	27
6	-18
9	-12

$6 + -18 = -12$

Total -12

$4x(x+6)(x-12)$

5) Factor: $x^2 - 55x + 336$

$(x-7)(x-48)$

Same signs
 336

1	336	12	28
2	168	14	24
3	112	16	21
4	84		
6	56		
7	-48		
8	-42		

$-7 + -48 = -55$

Total -55

6) Factor: $2x^2 + 50x + 228$

GCF $\rightarrow 2$

$$2(x^2 + 25x + 114)$$

$$2(x+6)(x+19)$$

Same Sign

+14

1	114
2	57
3	38
6 + 19 = 25	
Total = 25	

7) Simplify: $(2x - 5)^2 - (x + 2)(4x^2 - 8x + 6)$

$$(2x-5)(2x-5) - (4x^3 - 8x^2 + 6x + 8x^2 - 16x + 12)$$

$$4x^2 - 10x - 10x + 25 - (4x^3 - 10x + 12)$$

$$4x^2 + 20x + 25 - 4x^3 + 10x - 12$$

$$-4x^3 + 4x^2 + 30x + 13$$

8) Simplify: $(2x - 1)^3$

$$(2x-1)(2x-1)(2x-1)$$

$$(2x-1)(4x^2 - 2x - 2x + 1)$$

$$(2x-1)(4x^2 - 4x + 1)$$

$$8x^3 - 8x^2 + 2x - 4x^2 + 4x - 1$$

$$8x^3 - 12x^2 + 6x - 1$$