

## 9.8a Study Tip - Sample of each type of factoring (circle answer) ① Factor GCF

Factor each completely.

1)  $-16x^2 + 28x$

$$\boxed{-4x(4x-7)}$$

2)  $9x^9 - 18x^4 - 18x^3$

$$\boxed{9x^3(x^6 - 2x - 2)}$$

3)  $5n^2 + 8n + 3$

$$\boxed{(5n+3)(n+1)}$$

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

	1	24
	2	12
	3	8
	4	6

$$\boxed{(5x-4)(x-6)}$$

5)  $9v^2 - 16$

$$\boxed{(3v+4)(3v-4)}$$

6)  $27x^4 - 12x^2$

$$\boxed{3x^2(9x^2-4)}$$
  
$$\boxed{3x^2(3x+2)(3x-2)}$$

7)  $25x^2 - 40x + 16$

$$\boxed{(5x-4)(5x-4)}$$
  
$$\boxed{(5x-4)^2}$$

8)  $16x^2 + 40x + 25$

$$\boxed{(4x+5)(4x+5)} \quad \text{or} \quad \boxed{(4x+5)^2}$$

9)  $20x^3 - 16x^2 + 25x - 20$

$$4x^2(5x-4) + 5(5x-4)$$
  
$$\boxed{(5x-4)(4x^2+5)}$$

10)  $48n^3 + 42n^2 + 8n + 7$

$$6n^2(8n+7) + 1(8n+7)$$
  
$$\boxed{(8n+7)(6n^2+1)}$$

11)  $8x^3 - 3x^2 - 32x + 12$

$$x^2(8x-3) - 4(8x-3)$$
  
$$(8x-3)(x^2-4)$$
  
$$\boxed{(8x-3)(x+2)(x-2)}$$

12)  $5x^3 - 30x^2 + 40x$

$$5x(x^2 - 6x + 8)$$
  
$$\boxed{5x(x-2)(x-4)}$$

9.8b Study Tip - Sample of each type of factoring (circle answer)

Factor each completely.

1)  $-36x^2 - 120x$

$-12x(3x + 10)$

2)  $-12x^3 - 6x^2 - 20x$

$-2x(6x^2 + 3x + 10)$

Factor GCF and (-1) for negative leading coef.

3)  $7n^2 - 10n + 3$

1-7      1-3

$(7n - 3)(n - 1)$

4)  $3x^2 - x - 4$

1-3      1-4  
            2-2

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

5)  $50x^2 - 8$

$2(25x^2 - 4)$

$2(5x - 2)(5x + 2)$

6)  $16n^2 - 225$

$(4n + 15)(4n - 15)$

7)  $16n^2 - 24n + 9$

$(4n - 3)(4n - 3)$

$(4n - 3)^2$

8)  $125b^2 + 50b + 5$

$5(25b^2 + 10b + 1)$

$5(5b + 1)(5b + 1)$  or

$5(5b + 1)^2$

9)  $20m^3 - 4m^2 + 25m - 5$

$4m^2(5m - 1) + 5(5m - 1)$

$(5m - 1)(4m^2 + 5)$

10)  $15n^3 + 40n^2 + 3n + 8$

$5n^2(3n + 8) + 1(3n + 8)$

$(3n + 8)(5n^2 + 1)$

11)  $5n^3 - 3n^2 - 20n + 12$

$n^2(5n - 3) - 4(5n - 3)$

$(5n - 3)(n^2 - 4)$

$(5n - 3)(n - 2)(n + 2)$

12)  $-42x^3 - 30x^2 + 12x$

$-6x(7x^2 + 5x - 2)$

$-6x(7x - 2)(x + 1)$