

**Lesson 4.1**  
**Quiz - Form A**

**Unit 4**

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**Simplify. Then evaluate if  $x = -2$ ,  $y = -1$ :**

1.  $x^2 \cdot x^3$
2.  $(2x)(5x^3)$
3.  $(2xy^3)(-x^4y^2)$
4.  $(xy)(-3x^3)(2x^2y^2)$

**Simplify:**

5.  $(x^2)^3$
6.  $(-2x^3)^3$
7.  $(-3x^2y^3)^4$
8.  $(2x^2)^4(x^3)^5$
9.  $(x^2y^3)^2(-2xy^2)^6$
10.  $(x^{21})^2(x^{n+1})^3$

**Lesson 4.1**  
**Quiz - Form B**

**Unit 4**

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**Simplify. Then evaluate if  $x = -1$ ,  $y = 2$ :**

1.  $x^5 \cdot x^2$
2.  $(3x^2)(2x^4)$
3.  $(-x^3y^2)(-2x^2y)$
4.  $(3x^2y)(2x^2)(-3x^3y^2)$

**Simplify:**

5.  $(x^4)^2$
6.  $(-3x^3)^2$
7.  $(-2x^2y^4)^3$
8.  $(2xy^2)^3(-3x^2y^3)^3$
9.  $(x^2y^3)^3(-3xy^2)^4$
10.  $(x^{n-2})^3(x^n)^2$

**Lessons 4.2-4.3**  
**Quiz - Form A**

**Unit 4**

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**Simplify each polynomial. Then give the degree of the simplified polynomial answer:**

1.  $2a + 3a^2 - 5a + 4a^2$
2.  $4x + 2x^2 - 4x - 2x^2 + 9$
3.  $2a + 5a - 4a^2 + 6a - 3a^2$
4.  $3b + 5ab^2 - 3a^2b + 7b$
5.  $5a^2b^3 - 3ab + 5ab - 4a^2b^3$
6.  $2xy^2 + 2x^2y - 5x^2y^2 + 5x^2y - 3x^2y^2$

**Perform the indicated operation:**

7.  $(3x^2 - 2x + 4) + (2x^2 - 5x + 2)$
8.  $(5x^2 + 2x - 4) - (2x^2 + 3x - 1)$
9.  $(m^5 - 2m + 3m^2 - 4) - (4m^5 - 3m^3 + 2m^2 - 5)$
10.  $(2x + 5x^2 - 2) + (x^2 + 12x - 4)$

**Lessons 4.2-4.3**  
**Quiz - Form B**

**Unit 4**

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**Simplify each polynomial. Then give the degree of the simplified polynomial answer:**

1.  $4a + 2a^2 - 3a + 5a^2$
2.  $3x + 5 - 4x^2 - 3x + 4x^2$
3.  $5a - 3a^2 + 3a - 7a^2 + 2a$
4.  $8ab^2 + 2b - 4a^2b + 3b$
5.  $2a^3b^2 + 4ab - 5ab - a^3b^2$
6.  $5ab^2 + 4ab - 5ab - a^3b^2$

**Perform the indicated operation:**

7.  $(2x^2 - 5x + 2) + (8x^2 - 4x + 1)$
8.  $(5x^2 - x - 3) - (6x^2 - 3x + 11)$
9.  $(m^4 + 3m^2 - m + 3) - (3m^4 - 2m^3 + 5m^2 - 3)$
10.  $(3 - 2x^2 + 4x) + (5x^2 + 8x - 2)$

**Lessons 4.4-4.5**  
**Quiz - Form A**

**Unit 4**

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**Simplify:**

1.  $x^2 - x - 1 + 2(x^2 + 3x + 2)$
2.  $5 - 2t + t^2 - 2 + t - 3(t - 1 - t^2)$
3.  $x^2y^2(2x^2 - 3xy + 5y^2)$
4.  $-2x^3p(3x^2 - 2xp^2 + 5p)$
5.  $2a^2(3a^2 - 5a) - 4a^3(-2a^2 + a - 1)$

**Factor into primes:**

6. 68
7. 96

**Find the missing factor:**

8.  $(a^5)(?) = 5a^7$
9.  $(2s^2q)(?) = 6s^4q^5$
10.  $(?)(3xy) = -18x^3y^2$

**Lessons 4.4-4.5**  
**Quiz - Form B**

**Unit 4**

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**Simplify:**

1.  $3(p^2 - p + 2) - 2p + 1$
2.  $9y - 2 + 6y^2 - 3(y - y^2 + 4)$
3.  $n^2m(5n + 3nm - 2nm^2)$
4.  $4x^2y^3(x^3 - 2x^2y + 4xy^2 - y^3)$
5.  $3a^3(5a^2 - 4a) - 2a^2(-2a^3 - 3a + 2)$

**Factor into primes:**

6. 84
7. 92

**Find the missing factor:**

8.  $(y^5)(?) = y^{10}$
9.  $(3x^5)(?) = 15x^{15}$
10.  $(?)(5x^2y) = -20x^5y^2$

**Lesson 4.6 (Review)**  
**Quiz - Form A**

**Unit 4**

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**Factor out the GCF:**

1.  $5p^2 - 25p + 10$
2.  $2x^3 + 8x^2 - 6$
3.  $4m^3 - 6m^2 + 2m + 8mx$
4.  $5a^7 - 20a^4 + 10a^2$
5.  $26x^4 + 13x^3 - 7x^2$

**Simplify:**

6.  $-6 + 3m^2 - 3 - 2m^2$
7.  $x^4y^3(5x^2 - 2x^2y + 3y^3)$
8.  $2xy^2(5x^2y - 2xy^2) - 3x^2y^3(x + 3y)$

**Lesson 4.6 (Review)**  
**Quiz - Form B**

**Unit 4**

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**Factor out the GCF:**

1.  $3x^2 - 9x + 6$
2.  $6y^3 + 3y^2 + 2y$
3.  $5p^4 + 10p^3 - 15p + 5p^2$
4.  $12a^5 - 6a^3 + 5a^2$
5.  $16x^3 + 12x^6 - 8x^4$

**Simplify:**

6.  $5s^2 - 1 + 3s + 4 - 2s^2 + 1$
7.  $2xy^2(3x^2 - 5xy - 5xy^2 + y)$
8.  $3a^2b^3(2a^2b - ab^2) - 5ab^2(2a^3b^2 + 3a^2b^3)$



**Simplify:**

1.  $5a^2 + 3 - 4a - 2a^2 + 1 + 2a$
2.  $b^2 + 4b^3 - 3 - 2b + 1 - 2b^3$
3.  $x^5 - 3 + 4x^2 - 2x^3 + 1 - 2x^5$
4. What is the degree of this polynomial?  
 $2x^2y^2 - 3x^2y + xy^2 - 5xy^3$

**Simplify:**

5.  $(x^2y^3z)^3$
6.  $2p(3p)^2$
7.  $(2abc)(2b^3)(3a^2c^3)$
8.  $(5x^2)(-x^5)(-2x)$
9.  $(2x^2y^3z^4)^3$
10.  $(y^3 - 7y + 3y^2) - 2(y + 2y^2 - 4y^3)$

**Multiply:**

11.  $3x^2(4x^3 - 6x^2 + 2x + 5)$
12.  $-4m^2n^3(2m^3 - m^2n + 4mn^2 - 3n^2)$
13.  $2x^2yz^2(3x^2y + 2y^2z^2 + 4yz - 3z^2)$
14. Add  $(p^3 + 3p^2 - p) + (2p^3 - p^2 + 4p + 1)$
15. Subtract  $(2y^3 + y^2 - 4) - (-3y^3 + 3y^2 - 3)$
16. Subtract  $(2x^3 - x^2 - 5)$  from  $(6x^3 - 2x + 1)$
17. Factor 54 into primes.
18. Simplify  $3a^2 \cdot -4a^2$ . Then evaluate for  $a = -2$ .

**Factor out GCF, if any:**

19.  $2p^2 - 6p + 12$

20.  $5s^3 - 10s^2 - 25s$

21.  $3m^4 + 5m^2 - 2m + 6$

**Find the missing factor(s):**

22.  $(x^5)(?) = x^9$

23.  $(?)(2x^2y^3) = 10x^7y^5$

24.  $(-4a^5b^2c)(?) = 24a^7b^5c^3$

**Find the value of x that makes the sentence true:**

25.  $(y^{3x} + 1)^3 = y^{12}$

**Simplify:**

1.  $6x - 2x^2 + 1 - 3x + 4x^2$
2.  $4y^3 + 3y - 5y^2 - 4 + 5y - 2y^3$
3.  $3a + 4a^2 - 2a^5 - 2a^4 - 3a^2 - 4a$
4. What is the degree of this polynomial:  
 $5x^2y^3 - 3xy^2 + 5xy - 2y^3$

**Simplify:**

5.  $(a^2b^3c^2)^2$
6.  $3y(2y^2)^2$
7.  $(3mnp)(5p)(2m^2n)$
8.  $(2y)(-3y^2)(3y^3)$
9.  $(4x^5y^2z^3)^3$
10.  $(x - 3x^2 + 3) - 3(2x + x^2 - 2)$

**Multiply:**

11.  $2y^2(3y^2 + y - 3y^3 - 1)$
12.  $5ab^2(2a^3 - 3a^2b + ab^2 - 4b^2)$
13.  $-2x^2y^2z(3x^2yz^2 + 2xyz - 5z)$
14. Add  $(s^3 - 2x^2 + 1) + (3s^3 - 3s^2 - s)$
15. Subtract  $(3x^2 - 5x - 1) - (2x^2 + 3x - 5)$
16. Subtract  $(3y^3 - 2y^2 + 3)$  from  $(5y^3 - 2y + 5)$
17. Factor 72 into primes.
18. Simplify  $5x \cdot 7x^3$ . Then evaluate for  $x = -3$ .

**Factor out GCF, if any:**

19.  $3y^2 + 3y - 6$

20.  $6x^3 - 2x^2 + 10x$

21.  $3a^2 + 9a - 18a^3 + 3a$

**Find the missing factor:**

22.  $(y^2)(?) = y^7$

23.  $(4x^2y^3)(?) = (-16x^5y^4)$

24.  $(-6x^2y^3z^4)(?) = (24x^5y^3z^6)$

**Find the value of  $y$  that makes the sentence true:**

25.  $(x^y - 2)^4 = x^{16}$