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## Chapter 5 Test Form A

Evaluate.

1.  $(-2)^3$  1. \_\_\_\_\_

2.  $-2^4$  2. \_\_\_\_\_

3.  $4^{-2}$  3. \_\_\_\_\_

Simplify. Use only positive exponents in the final answer.

4.  $(4x^3)(2x^5)$  4. \_\_\_\_\_

5.  $(-4x^5)(5x^6)$  5. \_\_\_\_\_

6.  $\frac{a^6b^5}{a^3b^2}$  6. \_\_\_\_\_

7.  $(3x^4y^3)^0$  7. \_\_\_\_\_

8.  $\left(-\frac{1}{3}\right)^{-2}$  8. \_\_\_\_\_

9.  $\left(\frac{x^{-2}y}{x^{-3}y^5}\right)^{-2}$  9. \_\_\_\_\_

10. Express in scientific notation. 5,723,000 10. \_\_\_\_\_

11. Express in standard form.  $7.94 \times 10^{-6}$  11. \_\_\_\_\_

12. Perform the indicated operation and express the answer in scientific notation.  
 $(2.4 \times 10^3) \times (3.8 \times 10^5)$  12. \_\_\_\_\_

13. Find the degree of the following polynomial.  
 $4x^5 + 2x^3 - 3x^2 + 4x - 6$  13. \_\_\_\_\_

Perform the indicated operation.

14.  $(3x^2 - 7x - 9) + (3x^2 - 9x)$  14. \_\_\_\_\_

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Chapter 5 Test Form A *cont'd*

15.  $(3x^2 - 7x - 5) + (2x^2 - 8x - 4)$  15. \_\_\_\_\_

16.  $(5x^2 - 3x - 5) - (7x^2 - 4x + 4)$  16. \_\_\_\_\_

17.  $(4a^2 - 3ab + 5b^2) - (3a^2 - 3ab + 4b^2)$  17. \_\_\_\_\_

18.  $\left(-\frac{2}{3}x^5\right)\left(\frac{5}{6}x^8\right)$  18. \_\_\_\_\_

19.  $-2x^3(3x^4 - 2x^2 + 4)$  19. \_\_\_\_\_

20.  $(3x - 5)(2x + 3)$  20. \_\_\_\_\_

21.  $(3x + 2)^2$  21. \_\_\_\_\_

22.  $(2x - 5)(2x + 5)$  22. \_\_\_\_\_

23.  $\frac{4x^5 - 16x^3 - 8x^2}{4x^2}$  23. \_\_\_\_\_

24.  $\frac{x^2 + 5x - 24}{x + 8}$  24. \_\_\_\_\_

25. The area of a rectangle is  $x^2 - x - 6$ . Find the length if the width is  $x - 3$ . 25. \_\_\_\_\_

**Test 5 – A**

1.  $-8$

2.  $-16$

3.  $\frac{1}{16}$

4.  $8x^8$

5.  $-20x^{11}$

6.  $a^3b^3$

7.  $1$

8.  $9$

9.  $\frac{y^8}{x^2}$

10.  $5.723 \times 10^6$

11.  $0.00000794$

12.  $9.12 \times 10^8$

13.  $5$

14.  $6x^2 - 16x - 9$

15.  $5x^2 - 15x - 9$

16.  $-2x^2 + x - 9$

17.  $a^2 + b^2$

18.  $-\frac{5}{9}x^{13}$

19.  $-6x^7 + 4x^5 - 8x^3$

20.  $6x^2 - x - 15$

21.  $9x^2 + 12x + 4$

22.  $4x^2 - 25$

23.  $x^3 - 4x - 2$

24.  $x - 3$

25.  $x + 2$

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## Chapter 6 Test Form A

Factor each polynomial completely. If a polynomial cannot be factored, write "prime."

1.  $8x^3 - 12x^2$  1. \_\_\_\_\_

2.  $a(a+2) - 3(a+2)$  2. \_\_\_\_\_

3.  $3x^2 + 6xy - 5x - 10y$  3. \_\_\_\_\_

4.  $x^2 - x - 12$  4. \_\_\_\_\_

5.  $x^2 - 11x + 30$  5. \_\_\_\_\_

6.  $a^2 + 12a + 36$  6. \_\_\_\_\_

7.  $x^2 - 5x + 8$  7. \_\_\_\_\_

8.  $3x^2 + 2x - 8$  8. \_\_\_\_\_

9.  $x^3 - 8$  9. \_\_\_\_\_

10.  $6x^3 - 38x^2 + 40x$  10. \_\_\_\_\_

11.  $x^3 - 16x + 2x^2 - 32$  11. \_\_\_\_\_

12.  $x^5 - 4x^3 - 9x^3 + 36x$  12. \_\_\_\_\_

13.  $x^2 - xy - 6y^2$  13. \_\_\_\_\_

14.  $2x^2 + 5xy - 12y^2$  14. \_\_\_\_\_

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**Chapter 6 Test Form A *cont'd***

Solve each equation.

15.  $x^2 - x - 12 = 0$  15. \_\_\_\_\_

16.  $x^2 + 4x = 12$  16. \_\_\_\_\_

17.  $x^2 + x - 30 = 0$  17. \_\_\_\_\_

18.  $15x^3 - 4x^2 - 4x = 0$  18. \_\_\_\_\_

19.  $x^3 = 9x$  19. \_\_\_\_\_

20.  $20x^2 + 7x - 6 = 9$  20. \_\_\_\_\_

21.  $4x^2 = 49$  21. \_\_\_\_\_

22.  $x^2 - 7x = 0$  22. \_\_\_\_\_

23. A rectangle has an area of 54 square feet. 23. \_\_\_\_\_  
If the length is 3 feet more than the width,  
find the dimensions of the rectangle.

24. The sum of two numbers is 14. The sum of 24. \_\_\_\_\_  
the squares of the two numbers is 100. Find  
the two numbers.

25. The height  $h$  of a rock  $t$  seconds after it is dropped 25. \_\_\_\_\_  
off a cliff is given by the equation  
 $h = -16t^2 + 400$ . How many seconds after the  
rock is dropped will it hit the ground?

**Test 6 – A**

1.  $4x^2(2x-3)$
2.  $(a-3)(x+2)$
3.  $(3x-5)(x+2y)$
4.  $(x-4)(x+3)$
5.  $(x-6)(x-5)$
6.  $(a-6)^2$
7. prime
8.  $(3x-4)(x+2)$
9.  $(x-2)(x^2+2x+4)$
10.  $2x(x-5)(3x-4)$
11.  $(x+2)(x-4)(x+4)$
12.  $x(x-3)(x+3) \cdot$   
 $(x-2)(x+2)$
13.  $(x-3y)(x+2y)$
14.  $(2x-3y)(x+4y)$
15. -3, 4
16. 2, -6
17. 5, -6
18.  $0, \frac{2}{3}, -\frac{2}{5}$
19. 0, 3, -3
20.  $\frac{2}{5}, -\frac{3}{4}$
21.  $\frac{7}{2}, -\frac{7}{2}$
22. 0, 7
23.  $w = 6 \text{ ft}, l = 9 \text{ ft}$
24. 6, 8
25. 5 seconds