|  |  |
| --- | --- |
| 1. 2(x + 4 – 9y)2. 3(x2 + 4x + 11)3. –5(x3 – 8y + 9x) | 4. 12(-x2 – 4x + 3)5. –9(x + y + 3z)6. –11(2x2 – 4x3 + x) |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Expand.** |  |  | **Expand and simplify.** |
| 1. x(x + 2) | 2. x(x - 3) | 3. a(a + 1) | 18. 3(x2 + 2x - 5) - x(x + 1) |
| 4. t(t - 1) | 5. y(y + 4) | 6. m(m + 5) | 19. 5(x2 + 2x - 7) + 3x(x + 1) |
| 7. x(x - 5) | 8. y( y - 7) | 9. a(a - 10) | 20. -(xz - 3x - 1) +x(3x + 2) |
|  |  |  | 21. 4(2x + 3)+3x(x2 -x + 3) |
| 10. 3x(x + 2) | 11. | 4b(b - 11) | 22. 3m(m - 2)+4(m2- 5m + 6) |
| 12. 5t(t + 3) | 13. | 2x(3 + x) | 23. 5y(1 - y)+3(2y2- 4y + 3) |
| 14. 7y( y - 5) | 15. -2x(x + 4) | 24. -3x(x + 2)+2x(2x - 1) |
| 16. -x(x + 2) | 17. -y(y -3) |  |

### **Expand and simplify.**

26. x(x + 3)-x(x -2) 27. y(2 + y)+y(y - 1) 29. m(m - 1)+m(m - 1) 30. x(x + 2) - (2x-2) 31. y(y - 4) -y(3 –2y) 32. a(2a - 1) + a(a + 1) 33. x(x - 2) - x(x + 1)

**Operations with Polynomials**

**Questions Answers**

1.  18. 

2.  17. 

3.  16. 

4.  15. 

5.  14. 

6.  13. 

7.  12. 

8.  11. 

9.  10. 

10.  9. 

11.  8. 

12.  7. 

13.  6. 

14.  5. 

15. Subtract  from  4. 

16. Subtract  from  3. 

17. Add  to  2. 

18.  1. 

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Polynomial** | **Degree of Polynomial** | **Number of Terms** | **Coefficient of Second Term** | **Constant Term** |
| a) |  |  |  |  |  |
| b) |  |  |  |  |  |
| c) |  |  |  |  |  |

**APPLICATION**

1. A park is in the shape of an irregular quadrilateral. Three sides of the park can be represented by the polynomials$ 2x^{2}-4x+6$, $2x^{2}+5x-2 $ and$ x^{2}+x-1$. If the total perimeter of the park can be represented by the polynomial $8x^{2}-2x+3$ find the expression for the missing side. Show a complete algebraic solution.

$$x^{2}+x-1$$

$$2x^{2}+5x-2 $$

$$2x^{2}-4x+6$$

2. Consider the figure:







 

a. Fill in expressions for the missing sides.

b. Write and simplify an expression for the perimeter of the figure.

c. Write, expand and simplify an expression for the area of the figure.