Multiply.

1. (2r – 4)(7r2 – 6r – 6) 2. 2(4a + 2)(6a2 – a)

Solve for x.

3. x2 – 4 = 96 4. 5x2 = 100

5. 10x2 + 9 = 499 6. (x - 2)2 – 25 = 0

7. 4(x – 1)2 = 8 8. x2 + 4x + 3 = 0

9. n2 -10n + 22 = -2 10. -5x2 + 12x - 8 = 0

11. 5x2 + 8x + 5 = 0

Find the number of solutions.

12. 9n2 – 3n – 8 = -10 13. –x2 – 9 = 6x

14. Which of the following would be a correct step in completing the square to solve for the roots?

**x2 + 4x + 29**

a. (x + 2)2 = 5i

b. x + 2 = 5i

c. (x-2)2 = √ -25

d. (x-2)2 = -25

Simplify.

15. (2 – 4i)(-6 +4i) 16. 6 (-7 + 6i)(-4 + 2i)

17. How are the following problems different? (be specific)

Simplify: ( 2 + x )(3 – 2x)

Simplify: (2 + i ) ( 3 -2i)

Find the vertex for the following functions.

18. f (x) = ¼ (x - 8) 2 + 4 Vertex (\_\_\_\_, \_\_\_\_)

19. f (x) = −2(x + 2) 2 − 6 Vertex (\_\_\_\_, \_\_\_\_)

20. f (x) = (x + 3) 2 + 9 Vertex (\_\_\_\_, \_\_\_\_)