Creating a 20-question quiz for each chapter would be quite extensive, and given the constraints of this platform, it might be best to create them in sections. Let's start with a complete 20-question multiple-choice quiz for the chapter on "Quadratic Equations" first.

Quadratic Equations Quiz

1. What is the standard form of a quadratic equation?
   A) (ax^2 + bx + c = 0)
   B) (ax + bx^2 + c = 0)
   C) (ax^3 + bx + c = 0)
   D) (a + bx + cx^2 = 0)

2. What is the discriminant of the equation (2x^2 4x + 1 = 0)?
   A) 0
   B) 4
   C) 8
   D) 16

3. Which of the following is not a possible number of real roots of a quadratic equation?
   A) 0
   B) 1
   C) 2
   D) 3

4. What is the sum of the roots of the quadratic equation (x^2 7x + 12 = 0)?
   A) -7
   B) 7
   C) 12
   D) -12

5. The quadratic equation (x^2 6x + 9 = 0) has:
   A) Two distinct real roots
   B) One real root
   C) No real root
   D) Two imaginary roots

6. What are the roots of the equation (x^2 x 6 = 0)?
   A) 2 and -3
   B) 3 and 2
   C) -2 and 3
   D) -3 and -2

7. If the roots of (x^2 px + 16 = 0) are equal, what is the value of p?
   A) 4
   B) 8
   C) 12
   D) 16

8. For which value of k will the equation (x^2 4x + k = 0) have real and equal roots?
   A) 0
   B) 2

C) 4
D) 16

9. What is the product of the roots of the equation (3x^2 12x + 12 = 0)?
A) 1
B) 3
C) 4
D) 12

10. The roots of the quadratic equation (x^2 + 5x + 6 = 0) are:
A) -2 and -3
B) 2 and 3
C) -1 and -6
D) 1 and 6

11. How do you describe the roots of the equation (x^2 + 4x + 8 = 0)?
A) Real and unequal
B) Real and equal
C) Imaginary
D) Cannot be determined

12. If one root of (x^2 3x + k = 0) is 2, what is the value of k?
A) 1
B) 2
C) 3
D) 4

13. The equation (x^2 (a + 1)x + a = 0) has roots that are consecutive integers. What is the value of a?
A) 1
B) 2
C) 3
D) 4

14. If the roots of (x^2 8x + c = 0) are in the ratio 2:1, what is the value of c?
A) 4
B) 8
C) 12
D) 16

15. The roots of the equation (ax^2 bx + a = 0) are reciprocal if:
A) (a = b)
B) (a ≠ b)
C) (b = 0)
D) (b ≠ 0)

16. For what values of m does the equation (mx^2 2(m 1)x + m 1 = 0) have no real roots?
A) (m > 1)
B) (m < 1)

C) (m = 1)

D) All real m

17. The quadratic equation whose roots are (3) and (-4) is:
A) (x^2 + x 12 = 0)
B) (x^2 x 12 = 0)
C) (x^2 x + 12 = 0)
D) (x^2 + x + 12 = 0)

18. What is the vertex of the parabola (y = x^2 4x + 3)?
A) (2, -1)
B) (2, 1)
C) (-2, -1)
D) (-2, 1)

19. If (ax^2 + bx + c = 0) has two distinct roots which are positive, then:
A) (a > 0, c > 0)
B) (a < 0, c < 0)
C) (a > 0, c < 0)
D) (a < 0, c > 0)

20. If the roots of (x^2 bx + 36 = 0) are real and distinct, then b must satisfy:
A) (b > 12)
B) (b < 12)
C) (b = 12)
D) (b^2 > 144)

Here is the answer key for the 20-question Quadratic Equations quiz:

1. A) (ax^2 + bx + c = 0)
2. C) 8
3. D) 3
4. B) 7
5. B) One real root
6. A) 2 and -3
7. B) 8
8. C) 4
9. D) 12
10. A) -2 and -3
11. C) Imaginary
12. D) 4
13. B) 2
14. D) 16
15. A) (a = b)
16. B) (m < 1)
17. B) (x^2 x 12 = 0)
18. A) (2, -1)
19. A) (a > 0, c > 0)
20. D) (b^2 > 144)

If you're ready for the next chapter's quiz, just let me know and we can proceed!