**Factor**

1. *x*2 + 3*x* + 2 2. *x*2 - *x* - 2

3. *x*2 + *x* - 6 4. *a*2 + *a* - 12

5. *a*2 - 2*a* - 35 6. *b*2 + 8*b +* 16

7. *b*2 + 7*b* - 8 8. *y*2 - *y* - 6

9. *x*2 - 4 *x* - 45 10. *y*2 - 8 *y* + 15

**Factor**

1. 2x2 + 6 x + 4

2. 4a2 - 12a + 8

3. 10a2 + 10a - 20

4. 7a2 - 14a - 21

5. 3y2 - 15y + 18

6. a3 - 5a2 + 4a

7. x4 - 15x3 + 56x2

8. b4 - 3b3 - 10b2

9. 2a3 + 8a2 - 64a

10. 3a3 - 9a2 - 54a

|  |  |  |  |
| --- | --- | --- | --- |
| **Factor**  1. 2x2 + 3x + 1  2. 2y2 + 7 y + 3  3. 2b2 - 11b + 5  4. 3b2 - 13b + 4  5. 2t2 - t - 10 | | 6. 3p2 - 16 p + 5  7. 12 y2 - 7 y + 1  8. 2t2 + 5t - 12  9. 5 y2 - 22 y + 8  10. 3p2 + 22 p - 16 | |
| **Factor**  1. x2 - 25  2. x2 - 100  3. 9x2 - 1  4. 64x2 - 9  5. 36y2 + 49 | | 6. x2 - 6 x + 9  7. y2 + 14 y + 49  8. 5a2 - 20a - 25  9. 2x2 - 72  10. 4x2 - 16 | |
| **Simplify**  1.  3.  5.  7.  9.  11.  13. | 2.  4.  6.  8.  10.  12.  14. | |

**Divide and rationalize the denominator:**

|  |  |
| --- | --- |
| 1.  2.  3.  4.  5.  6.  7.  8.  9. | 10.  11.  12.  13.  14.  15.  16.  17.  18. |

**Identify the error in the following questions.**

1.

2.

3.

4.

|  |  |
| --- | --- |
| **Solve for the variable.**  1) −20 = −4x − 6x  2) 6 = 1 − 2n + 5  3) 8x − 2 = −9 + 7x  4) a + 5 = −5a + 5  5) 2(4x − 3) − 8 = 4 + 2x  **Solve for the variable** | 6) 3n − 5 = −8(6 + 5n)  7) −(1 + 7x) − 6(−7 − x) = 36  8) −3(4x + 3) + 4(6x + 1) = 43  9) 27a − 22 = −4(1 − 6a)  10) −5(1 − 5x) + 5(−8x − 2) = −4x − 8x |
| 1) 2n 3 − n 2 − 136n = 0  2) 5x3 + 4x2 − 57x = 0  3) 6n4 + 9n3 + 3n2 = 0  4) 2n3 + 24n2 − 56n = 0  5) x3 − x = 0 | 6) 2r 5 − 6r 4 − 56r 3 = 0  7) 12b3 − 2b2 − 30b = 0  8) 4r4 − 64r2 = 0  9) 12b3 + 6b2 = 18b  10) 6v3 − 42v = −4v2 |

**Identify the error in the following questions.**

1.  x3 + 5x2 = 3x + 45

6x2 = 3x + 45

6x2 - 3x – 45 = 0

3(2x2  - x – 15) = 0

3(x – 3) (2x + 5) = 0

x= 3, -5/2

2. 6x3 – 16x = 4x2

6x3 – 4x2 - 16x = 0

2x(3x2 – 2x – 4) = 0

2x(3x + 4)(x - 2) = 0

x= 2, 0, -4

3. 3x2(3x + 4) = 12x(x + 3)

9x3 + 12x2 = 12x2  + 36x

9x3 – 36x = 0

9x(x2 – 4) = 0

x= 0, 4