

Factoring Expressions

Question 1. Factor the following expressions using the greatest common factor method.

- a) $3 + 6 + 15$
- b) $12 + 8 + 20$
- c) $8x^2 + 2x + 6x^3$
- d) $a^2bc + ab^2c + abc^2$
- e) $6a^3b^2 + 9a^2b + 21a^4b^3$

Question 2. Factor the following expressions using the grouping method.

- a) $x^2 + 3x + 4x + 12$
- b) $4x^2 - 2x + 6x - 3$
- c) $3y^2 - 12y + 5y - 20$
- d) $x^2 + 2x + x + 2$
- e) $xy - 3y + x - 3$
- f) $2xy + 2y^2 - xy - x^2$

Question 3. Factor the following quadratic expressions.

- a) $x^2 + 5x + 4$
- b) $x^2 + x - 6$
- c) $z^2 - 3z - 10$
- d) $y^2 - 9$
- e) $a^2 + 9a + 14$

Question 4. Factor the following quadratic expressions.

- a) $2x^2 + 3x - 2$
- b) $6x^2 + 7x + 2$
- c) $3x^2 - 7x - 20$
- d) $4x^2 - 12x + 5$
- e) $20x^2 + 11x - 3$

Question 5. Factor the following expressions as much as possible.

- a) $x^2 - y^2$
- b) $a^3 - b^3$
- c) $x^3 + 8$
- d) $y^3 - 1$
- e) $x^4 - 1$

You can check your answers on page 278.