

1. Express the following as in the form of $(a + b)(a - b)$

a. $20a^2 - 45b^2$

b. $x^2 - 2xy + y^2 - z^2$

2. For $a = 3$, simplify $a^2 + 5a + 4$ and $a^2 - 5a$

3. Find the common factors of the following:

$$3x^2y^3, 10x^3y^2 \text{ and } 6x^2y^2z$$

4. Factorize the following expressions:

a. $14(3x - 5y)^3 + 7(3x - 5y)^2$

b. $15xy + 15 + 9y + 25x$

5. Factorize $(x + y)^2 - 4xy$

6. Factorize $x^2 + 6x - 16$

7. Solve for $(4x^2 - 100) \div 6(x + 5)$