

Assignment for Factorization

Question 1

Use the below expression to solve the below problems

$$a^2 - b^2 = (a - b)(a + b)$$

a. $x^2 - 81$

b. $49a^2 - 36$

c. $121 - 49z^2$

d. $4x^2 - 9y^2$

e. $16x^2 - 225y^2$

f. $9x^2y^2 - 25$

g. $16x^2 - 81$

h. $(a + b)^2 - 9c^2$

i. $a - (x - y)^2$

j. $4(x + y)^2 - x^2$

k. $36(a + b)^2 - 16(a - b)^2$

l. $20x^2 - 45y^2$

m. $z^3 - 81z$

n. $12p^2 - 27$

o. $3z^5 - 27z^3$

p. $36a^2b^2 - 8$

q. $z^2 - x^2 - 2x - 1$

r. $9x^2 - y^2 + 4y - 4$

s. $p^2 - 2pq + q^2 - r^2$

Question 1

User the below expression to solve the below problems

$$(a+b)^2 = (a^2 + b^2 + 2ab)$$

$$(a-b)^2 = (a^2 + b^2 - 2ab)$$

1. $p^2 + 4p + 5$

2. $x^2 + 19x + 81$

3. $3 + 6z + z^2$

4. $9 + 6x + x^2$

5. $z^2 + 6xz + 9x^2$

6. $9x^2 + 30x + 25$

7. $36z^2 + 12z + 1$

8. $9x^2 + 30x + 25$

9. $z^2 + z + 1/4$

10. $4z^2 - 6z + 9$

11. $4p^2 - 20p + 25$

12. $9x^2 - 30x + 25$

13. $1 - 2y + y^2$

14. $4 - 12y + 9y^2$

15. $x^2y^2 - 6xyz + 9z^2$

16. $p^2 - 6pq + 9p^2$

Question 3

Find and correct the errors in the statement: $(3x)^2 + 5x = 9x + 5x = 14x$

Answer

$$\text{LHS} = (3x)^2 + 5x = 9x^2 + 5x$$

$$\text{RHS} = 9x + 5x = 14x$$

$$\text{Third} = 14x$$

LHS \neq RHS = third part

Correct statement would be

$$(3x)^2 + 5x = 9x^2 + 5x$$

Question 4

Find and correct the errors in the statement: $(4x + 2)^2 = 2x^2 + 16x + 4$

Answer

$$\text{LHS} = (4x + 2)^2 = 16x^2 + 16x + 4$$

$$\text{RHS} = 2x^2 + 16x + 4$$

LHS \neq RHS

Correct statement would be

$$(4x + 2)^2 = 16x^2 + 16x + 4$$

Question 5

Find and correct the errors in the statement: $(z - 1)^2 = z^2 - 1$

Answer

$$\text{LHS} = (z - 1)^2 = z^2 - 2z + 1$$

$$\text{RHS} = z^2 - 1$$

$$\text{LHS} \neq \text{RHS}$$

Correct statement would be

$$(z - 1)^2 = z^2 - 2z + 1$$

Question 6

Find and correct the errors in the statement: $(y + 6)^2 = y^2 + 36$

Answer

$$\text{LHS} = (y + 6)^2 = y^2 + 12y + 36$$

$$\text{RHS} = y^2 + 36$$

$$\text{LHS} \neq \text{RHS}$$

Correct statement would be

$$(y + 6)^2 = y^2 + 12y + 36$$