

Exercise 7C

Q1

# Answer:

We have:

$$x^2 + 8x + 16 = x^2 + 2 \times x \times 4 + (4)^2$$
  
=  $(x+4)^2$ 

$$x^2 + 8x + 16 = (x+4)^2$$

Q2

### Answer:

We have:

$$x^{2} + 14x + 49 = x^{2} + 2 \times x \times 7 + (7)^{2}$$
$$= (x+7)^{2}$$

$$x^2 + 14x + 49 = (x+7)^2$$

Q3

### Answer:

We have:

$$1 + 2x + x^{2} = x^{2} + 2x + 1$$

$$= x^{2} + 2 \times x \times 1 + (1)^{2}$$

$$= (x+1)^{2}$$

$$1 + 2x + x^2 = (x+1)^2$$

Q4

### Answer:

We have:

$$9+6z+z^{2} = z^{2}+6z+9$$

$$= z^{2}+2 \times x \times 3 + (3)^{2}$$

$$= (z+3)^{2}$$

$$\therefore 9 + 6z + z^2 = (z+3)^2$$

Q5

# Answer:

We have:

$$x^{2} + 6ax + 9a^{2} = x^{2} + 2 \times x \times 3a + (3a)^{2}$$
  
=  $(x + 3a)^{2}$ 

$$x^2 + 6ax + 9a^2 = (x + 3a)^2$$

Q6

### Answer:

We have:

$$4y^{2} + 20y + 25 = (2y)^{2} + 2 \times 2y \times 5 + (5)^{2}$$
$$= (2y+5)^{2}$$

$$4y^2 + 20y + 25 = (2y+5)^2$$

### Answer:

We have:

$$36a^{2} + 36a + 9 = (6a)^{2} + 2 \times 6a \times 3 + (3)^{2}$$
$$= (6a + 3)^{2}$$

$$36a^2 + 36a + 9 = (6a + 3)^2$$

Q8

### Answer:

We have:

$$9m^2 + 24m + 16 = (3m)^2 + 2 \times 3m \times 4 + (4)^2$$
  
=  $(3m+4)^2$ 

$$\therefore 9m^2 + 24m + 16 = (3m+4)^2$$

Q9

### Answer:

We have:

$$z^2 + z + \frac{1}{4} = z^2 + 2 \times z \times \frac{1}{2} \times \left(\frac{1}{2}\right)^2$$
  
=  $\left(z + \frac{1}{2}\right)^2$ 

$$z^2 + z + \frac{1}{4} = \left(z + \frac{1}{2}\right)^2$$

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