

Key (Back)

Question 4:

$$a^2 - b^2 = (a+b)(a-b)$$
$$4x^2 - 9 = (px+t)(px-t)$$
$$(2x)^2 - 3^2 = (2x-3)(2x+3)$$

In the equation above, p and t are constants. Which of the following could be the value of p ?

a) 2

b) 3

c) 4

d) 9

Question 5:

If $a^2 + b^2 = z$ and $ab = y$, which of the following is equivalent to $4z + 8y$?

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

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

c) $(4a + 4b)^2$

d) $(4a + 8b)^2$

$$\begin{aligned} a^2 + 2ab + b^2 &= (a+b)^2 \\ 4(a^2 + b^2) + 8(ab) &= 4a^2 + 4b^2 + 8ab \\ &= 4a^2 + 8ab + 4b^2 \\ &= (2a + 2b)^2 \end{aligned}$$

Question 6:

Which of the following is equivalent to the expression shown above?

a) $(3a^2 + 2b^2)^2$

b) $(3a + 2b)^4$

c) $(9a^2 + 4b^2)^2$

d) $(9a + 4b)^4$

$$\begin{aligned} 9a^4 + 12a^2b^2 + 4b^4 &= (3a^2 + 2b^2)^2 \\ (3a^2)^2 + 2 \cdot 3a^2 \cdot 2b^2 + (2b^2)^2 &= 9a^4 + 12a^2b^2 + 4b^4 \end{aligned}$$

$$\begin{aligned} a^2 + 2ab + b^2 &= (a+b)^2 \end{aligned}$$