

Q1. Find the squares of each of the following, using algebraic identities:

a. $(0.2x - 1.2y)^2 = \underline{\hspace{4cm}}$

b. $\left(1\frac{4}{5}x + 2\frac{3}{4}y\right)^2 = \underline{\hspace{4cm}}$

Q2. Simplify the following, using algebraic identities:

a. $(2p + 9q^2)(2p - 9q^2) = \underline{\hspace{4cm}}$

b. $\left(\sqrt{3}x - \frac{1}{\sqrt{3}x}\right)^2 = \underline{\hspace{4cm}}$

c. $\left(\frac{1}{5}a + \frac{5}{6}b\right)^2 = \underline{\hspace{4cm}}$

d. $\left(\frac{3}{5}x^2 + 1\frac{1}{5}y^2\right)\left(\frac{3}{5}x^2 - 1\frac{1}{5}y^2\right) = \underline{\hspace{4cm}}$

Q3. Without actual multiplication, find the squares of the following numbers:

a. $(399)^2 = \underline{\hspace{2cm}}$

b. $(110)^2 = \underline{\hspace{2cm}}$

c. $(295)^2 = \underline{\hspace{2cm}}$

Q4. Evaluate the following using identities:

a. $208 \times 192 = \underline{\hspace{2cm}}$

b. $5.06 \times 4.94 = \underline{\hspace{2cm}}$

Q5. Find the value of x in the following:

a.
$$\frac{3.35 \diamond 3.35 - 1.65 \diamond 1.65}{1.7} = 5x$$

$x =$ _____

b.
$$\frac{843 \diamond 843 - 157 \diamond 157}{1000} = 600 + x$$

$x =$ _____

Q6. Fill in the blanks, using algebraic identities:

a. $36x^2 + 6x + \frac{1}{4} = (\text{_____})^2$

b. $25p^4 - 30p^2q + 9q^2 = (\text{_____})^2$

Q7. Find the value of $x^2 + \frac{1}{x^2}$, if $x - \frac{1}{x} = 5$.

Answer: _____

Q8. Find the value of $x^4 + \frac{1}{x^4}$, if $x - \frac{1}{x} = 3$.

Answer: _____

Q9. If $2x + 3y = 5$ and $xy=2$, find the value of $(4x^2 + 9y^2)$.

$4x^2 + 9y^2 =$ _____

Q10. Find the measure of each side of a square which covers an area of $(16x^2 + 9y^2 - 24xy)$ square units.

Length of one side of the square = _____

Answers

- a. $0.04x^2 - 0.48xy + 1.44y^2$; b. $3\frac{6}{25}x^2 + 9\frac{9}{10}xy + 7\frac{9}{16}y^2$
- a. $4p^2 - 81q^4$; b. $3x^2 - 2 + \frac{1}{3x^2}$; c. $\frac{a^2}{25} + \frac{1}{3}ab + \frac{25}{36}b^2$; d. $\frac{9}{25}x^4 - 1\frac{11}{25}y^4$
- a. 1,59,201; b. 12,100; c. 87,025
- a. 39936; b. 24.9964
- a. $x = 1$; b. $x = 86$
- a. $(6x + \frac{1}{2})$; b. $(5p^2 - 3q)$
- 23
- 119
- 1
- $4x - 3y$