

**Q1. Find the value of  $x$  in each of the following equations:**

a.  $6(3x - 1) = 5(10 - 2x)$

$x =$  \_\_\_\_\_

b.  $\frac{x+1}{4-x} = 4$

$x =$  \_\_\_\_\_

**Q2. Match the following equations with their solutions:**

Equation	Solution
$\frac{2x-a}{a-b} = \frac{a}{a-b}$	$x = \frac{1}{2}(a+b)$
$\frac{x+8}{x-8} = \frac{a+b+8}{a+b-8}$	$x = a + b$
$\frac{2x-a}{b} = \frac{2x-b}{a}$	$x = a$

**Q3. Find whether the given value of  $x$  is the correct solution for each of the following equation or not. Put a Tick or Cross in the space provided.**

Equation	Solution	Correct/Incorrect (✓/✗)
a. $\frac{x-6}{x+3} = \frac{2}{5}$	$x = 12$	_____
b. $3\left(\frac{x+1}{4}\right) - 3 = 0$	$x = -3$	_____
c. $\frac{x+2a}{x-3a} = \frac{2}{3}$	$x = -12a$	_____

**Q4.** If  $x = 3p$ , find the value of  $p$  from the equation given below:

$$2(1 + 4p) - 3(2 + 3x) = 15$$

$p =$  \_\_\_\_\_

**Q5.** Mr. Kumar's age is six times his son's age. After 20 years, he will be twice his son's age. Find the present age of Mr. Kumar and his son.

Mr. Kumar's age = \_\_\_\_\_

His son's age = \_\_\_\_\_

**Q6.** The sum of the digits of a two-digit number is 5. If the new number formed by reversing the digits is greater than the original number by 9, find the original number.

Answer: \_\_\_\_\_

**Q7.** The length of a rectangle is 3 cm more than its breadth. If the perimeter of the rectangle is 54 cm, find the area of the rectangle.

Answer: \_\_\_\_\_

**Q8.** The sum of two base angles of an isosceles triangle is less than the vertical angle by  $100^\circ$ . Find the measure of all the three angles.

Answer: \_\_\_\_\_

**Q9.** The denominator of a rational number is one more than twice its numerator. If 2 is added to both the numerator and the denominator the rational number becomes  $\frac{5}{9}$ . Find the original rational number.

Answer: \_\_\_\_\_

**Q10.** Tick the inequation which will have an empty solution set, if the replacement set is  $\{-111, -11, -1, 0, 1, 11, 111\}$ :

a.  $9x + 100 > 1000$

b.  $9x - 100 > 800$

c.  $9x - 1000 > 800$

d.  $-9x - 100 > 800$

Answer: \_\_\_\_\_

## Answers

1. a.  $x = 2$ ;      b.  $x = 3$

2.

Equation	Solution
$\frac{2x-a}{a-b} = \frac{a}{a-b}$	$x = a$
$\frac{x+8}{x-8} = \frac{a+b+8}{a+b-8}$	$x = a + b$
$\frac{2x-a}{b} = \frac{2x-b}{a}$	$x = \frac{1}{2}(a+b)$

3.

Equation	Solution	Correct/Incorrect (✓/✗)
a. $\frac{x-6}{x+3} = \frac{2}{5}$	$x = 12$	✓
b. $3\left(\frac{x+1}{4}\right) - 3 = 0$	$x = -3$	✗
c. $\frac{x+2a}{x-3a} = \frac{2}{3}$	$x = -12a$	✓

4.  $p = -1$

5. 30 years, 5 years

6. 23

7.  $180 \text{ cm}^2$

8.  $20^\circ$ ,  $20^\circ$ ,  $140^\circ$

9.  $\frac{3}{7}$

10. (c)