$$= \frac{(n-4)!}{(n-6)!}$$

$$= \frac{(n-4) \times (n-5) \times (n-6)!}{(n-6)!}$$

$$= \frac{(n-4) \times (n-5) \times 1}{1}$$

$$= (n-4)(n-5)$$

51. Find the value of x: (PP)

$$x = \frac{x^2}{2}$$

Solution:

Cancelling x from both sides:

$$\frac{x}{x} = \frac{x^{1}}{2}$$

$$1 = \frac{x}{2}$$

$$1 \times 2 = x$$

$$x = 2$$

52. Find the value of $2x + 2y$, if: (PP)

$$x + y = 10$$

$$x + 2y = 2$$

Solution:

Given that:

$$x + y = 10$$

Multiplying both sides with "2", we get:

$$2(x + y) = 2(10)$$

$$2x + 2y = 20$$

53. Find: 9.8.7.6 = ? (PP)

(A) $5!/_{9!}$

(B) $9!/_{5!}$

(C) $4!/_{9!}$

(D) $9!/_{4!}$

Solution:

$$= 9.8.7.6$$

Multiplying and dividing by "5.4.3.2.1", we get:

$$= \frac{9.8.7.6.5.4.3.2.1}{5.4.3.2.1} = \frac{9!}{5!}$$

Hence, option B is correct.

54. Find the value of x: (PP)

$$\frac{\sqrt{x}}{200} = 0.02$$

Solution:

Simplifying:

$$\sqrt{x} = 0.02 \times 200$$

$$\sqrt{x} = \frac{2}{100} \times 200$$

$$\sqrt{x} = \frac{2}{1} \times 2 = 4$$

$$x = 2$$

55. The sum of two numbers is 40 and their difference is 4. Find the numbers? (PP)

Solution:

Given that:

$$x + y = 40 \ldots (1)$$

$$x - y = 4 \ldots (2)$$

Adding the above two equations, we get:

$$2x = 44$$

$$x = \frac{44}{2} = 22$$

Substituting the value of x in equation (1), we get:

$$y = 18$$

$$(x, y) = (22, 18)$$

56. Find the value of p: (PP)

$$p - 7 = 5 - p$$

Solution:

Simplifying:

$$p + p = 5 + 7$$

$$2p = 12$$

$$p = \frac{12}{2} = 6$$

57. Find: (PP)

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

(A) $(a)^2 - (b)^2$

(B) $(b)^2 - (a)^2$

(C) $(b - a)^2$

(D) $-(b - a)^2$

Solution:

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

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

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

So, option C is correct.

58. Find the value of x:

$$\frac{5}{6} = \frac{x}{8}$$

Solution:

By doing cross-multiplication, we get:

$$x \times 6 = 5 \times 8$$

$$x = \frac{40}{6} = \frac{20}{3}$$

59. The value of $a - b - \sqrt{(a-b)^2}$ is equal to: (PP)

(A) $2b$

(B) $-2b$

(C) $0, for\ all\ values\ of\ a\ and\ b$

(D) $0, only\ when\ a > b$

(E) $2(a-b)$

Solution:

$$= a - b - \sqrt{(a-b)^2} = a - b - (a-b)$$

$$= a - b - a + b = 0$$

The answer will be option (C) or option (D). We will check both:

$Option\ (C) \quad \rightarrow \quad Let\ a = 3, b = 5 \quad \rightarrow \quad a - b - \sqrt{(a-b)^2} = -4$

$Option\ (D) \quad \rightarrow \quad Let\ a = 5, b = 3 \quad \rightarrow \quad a - b - \sqrt{(a-b)^2} = 0$

Hence, option (D) is correct.

60. What is the value of y, if $x = -1$: (PP)

$$y = \frac{2x^3 - x^4}{x^5}$$

Solution:

$$y = \frac{2x^3 - x^4}{x^5}$$

Substituting the value of x in this equation, i.e., $x = -1$, we get:

$$y = \frac{2(-1)^3 - (-1)^4}{(-1)^5} = \frac{2(-1) - (1)}{(-1)}$$

$$y = \frac{-2 - 1}{-1} = \frac{-3}{-1} = \frac{3}{1} = 3$$