

SBOA Public School

Unit test- I

Total marks: 10
Roll no. :

Time: 1 hr

**ALL QUESTIONS ARE COMPULSORY.
EACH QUESTION CARRY EQUAL MARKS.**

(1) Solve the following equations:

$$(a) x + y = 7; 2x + 5y = 20$$

$$(b) x - y = 6; x - 4y = 3$$

(2) Find the value of x:

$$1 = \left(\frac{4}{x + \frac{4}{x + \frac{4}{x + \dots}}} \right)$$

$$x = \left(\frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \dots}}} \right)$$

(3) Find the value of:

$$(a) \sqrt{12 + \sqrt{12 + \sqrt{12 + \sqrt{12 + \sqrt{12 + \sqrt{\dots}}}}}}}$$

$$(b) \sqrt{7 - 2\sqrt{6}}$$

(4) If $\tan^2 \theta = 1 - e^2$, then the value of $\sec \theta + \tan^3 \theta \cdot \csc \theta$ is equal to ?(Answer in terms of only e)

(5) Calculate the determinant of the following matrix-

$$\begin{bmatrix} 3 & 4 & 5 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$

$$\begin{bmatrix} x & x^2 & 1 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$$