



Maths Assignment for Holiday Homework

Q.1. Solve the following system of linear equations graphically.

$$2x + y = 10$$

$$4x - y = 8$$

Does the point (1, -4) lie on any of the lines?

Q.2. Solve for x and y

$$\frac{1}{x+1} + \frac{1}{y+1} = 10$$

$$\frac{1}{x+1} - \frac{1}{y+1} = 4$$

Q.3. If $3p + q = 23$ and $4p - q = 19$, then find the value of $3p - 5q$.

Q.4. Five times the age of a man is twelve times the age of his son. 5 years ago, the ratio of their ages was 11 : 4. Find their present ages.

Q.5. Find the values of a and b for which the following system of linear equations has infinite no. of solutions

$$(a - 1)x + 3y = 2$$

$$6x + (1 - 2b)y = 6$$

Q.6. If $5 \cos A = 3$, evaluate $\frac{\sin A - \cot A}{2 \tan A}$

Q.7. If $\sin B = \frac{1}{2}$, show that $3 \cos B - 4 \cos^3 B = 0$

Q.8. If $\cos(40 + x) = \sin 30^\circ$, find the value of x .

Q.9. In a $\triangle ABC$, $\angle A + \angle B = 90^\circ$, find the value of $\frac{\sin A \cos B + \cos A \sin B}{\sin C}$

Q.10. Prove that

a) $\sqrt{(1 - \cos^2 \theta) \sec^2 \theta} - \tan \theta$

b) $\sqrt{\frac{1 - \sin A}{1 + \sin A}} + \sqrt{\frac{1 + \sin A}{1 - \sin A}} = 2 \sec A$