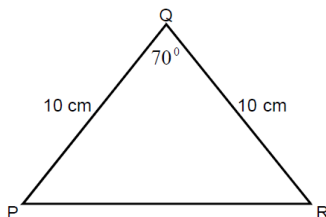Q1. Solve the following:

    a. $2a + 3b = 19$ b. $5g - 3h = 16$

        $3a - b = 1$ $3g + h = 4$

Q2. Calculate the area of the following triangle:

Q3. Solve the following:

    a. $x^2 - 8x + 15 = 0$ b. $20 = 8x - x^2$ c. $(x + 5)(x - 3) = -12$

Q4. Find the nature of the roots of :

    a. $y = x^2 + 5x - 3$ b. $y = x^2 - 6x + 9$ c. $y = (x + 5)(x - 2)$

Q5. Calculate the volume of a cylinder with a radius of 5cm and a height of 6cm, Take $\pi = 3.14$ **(non- calc)**

Q6. A parabola has a minimum turning point of (5, -3).

    i.   State the equation of the axis of symmetry.

    ii.   Find the values of a & b given the general equation is $y = (x + a)^2 + b$

Q7. A quadratic equation is given in the form: $f(x) = 3x2 - 9x + 2$

Solve the find the roots of the equation, giving your answer correct to 1 decimal place.

Q8. The pressure in my car tyre should be 30psi, but a nail in it is causing it to lose pressure at the rate of 15% every mile that I drive. How far can I drive before the pressure falls below 20psi?

Q9. Calculate:

    a. $3\frac{3}{5} \div 2\frac{1}{4}$ b. $6\frac{7}{8} - 4\frac{1}{3}$ c. $3\frac{1}{2} + 1\frac{5}{6}$

Q10. Solve the following:

    a. $\frac{x}{5} - 2 = \frac{1}{3}$ b. $\frac{1}{3}x + 4 = \frac{3}{2}$ c. $\frac{3(x+1)}{4} - \frac{1}{3} = 10$

Q9. A parabola has the equation $y = 5(x + 2)^2 + 9$

    i.   Find the co-ordinates of the turning point

    ii.   State the equation of the axis of symmetry.

Q10. A parabola has roots at (-3, 0) and (7, 0). Find the equation of the axis of symmetry.

Q11. Change the subject of the formula to the letter in bold.

    a. $R = c(\mathbf{a} + b)$ b. $A = p\mathbf{r}^2$ c. $D = b^2 - 4a\mathbf{c}$