$$\frac{-p}{8} + \frac{9}{4} - \frac{q}{2} + 1 = 4$$

$$-p + 18 - 4q = 24$$

$$-p - 4q = 6 \qquad \text{-----(1)}$$

$$g(x) = 9x^3 + qx^2 + px + 1$$

When it is divided by $(3x - 1)$ the remainder is 3.

$$g\left(\frac{1}{3}\right) = 3$$

$$9\left(\frac{1}{3}\right)^3 + q\left(\frac{1}{3}\right)^2 + p\left(\frac{1}{3}\right) + 1 = 3$$

$$\frac{1}{3} + \frac{q}{9} + \frac{p}{3} = 2$$

$$3 + q + 3p = 18$$

$$3p + q = 15$$

(1) x 3 $\Rightarrow$ $\quad -3p - 12q = 18$

(2) $\Rightarrow$ $\quad 3p + q = 15$

$$-11q = 33$$

$$\boldsymbol{q = -3}$$

From (1) $\quad -p + 12 = 6$

$$\boldsymbol{p = 6}$$