

Answer on Question #52885 – Math – Algebra

Question

a positive integer 'n' when divided by 9, gives 7 as remainder what will be the remainder when $(3n - 1)$ is divided by 9?

Solution

$$\frac{n}{9} = m + \frac{7}{9} \rightarrow n = 9m + 7;$$

$$3n - 1 = 3(9m + 7) - 1 = 27m + 21 - 1 = 27m + 20;$$

$$\frac{3n-1}{9} = \frac{27m+20}{9} = 3m + \frac{20}{9} = 3m + 2 + \frac{2}{9} \rightarrow 3n - 1 = 9(3m + 2) + 2$$

A positive integer $3n - 1$ when divided by 9 gives 2 as remainder.