64. The variable x varies directly as y and $x = 80$ when y is 160. What is y when x is 64?

65. l varies directly as m and l is equal to 5, when $m = \frac{2}{3}$. Find l when $m = \frac{16}{3}$.

136. PQRS is a rectangle. The perpendicular ST from S on PR divides $\angle S$ in the ratio 2:3. Find $\angle TPQ$.

137. A photo frame is in the shape of a quadrilateral. With one diagonal longer than the other. Is it a rectangle? Why or why not?

138. The adjacent angles of a parallelogram are $(2x - 4)°$ and $(3x - 1)°$. Find the measures of all angles of the parallelogram.

78. The probability of getting a prime number is the same as that of a composite number in a throw of a dice.

79. In a throw of a dice, the probability of getting an even number is the same as that of getting an odd number.

99. Find the value of x so that

(i) $\left(\frac{5}{3}\right)^{-2} \times \left(\frac{5}{3}\right)^{-14} = \left(\frac{5}{3}\right)^{8x}$

(ii) $(-2)^3 \times (-2)^{-6} = (-2)^{2x-1}$

(iii) $(2^{-1} + 4^{-1} + 6^{-1} + 8^{-1})^x = 1$

103. The sum of $(x + 5)$ observations is $x^4 - 625$. Find the mean of the observations.

Example 7 : Solve : $\frac{x}{2}+\frac{x}{4}+\frac{x}{5}+10000 = x$

15. The sum of three consecutive multiples of 7 is 357. Find the smallest multiple.

(a) 112

(b) 126

(c) 119

(d) 116

112. Simplify

(a) $\frac{32}{5}+\frac{23}{11}\times\frac{22}{15}$

(c) $\frac{3}{7}+\frac{-2}{21}\times\frac{-5}{6}$

135. An electron's mass is approximately $9.1093826 \times 10^{-31}$ kilograms. What is this mass in grams?

177. Find x.

(4) $\left(\frac{-6}{7}\right)^{x-7} = 1$

(5) $2^{3x} = 8^{2x+1}$