y when x is 64?

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

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

in the ratio 2:3. Find ∠TPQ.

137. A photo frame is in the shape of a quadrilateral. With one diagonal

136. PQRS is a rectangle. The perpendicular ST from S on PR divides ∠S

longer than the other. Is it a rectangle? Why or why not?

138. The adjacent angles of a parallelogram are $(2x - 4)^\circ$ and $(3x - 1)^\circ$. 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

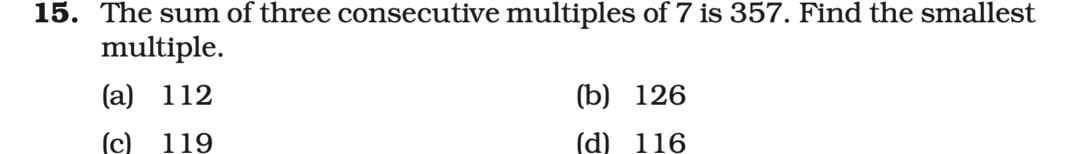
(i)
$$\left(\frac{5}{3}\right)^{-2} \times \left(\frac{5}{3}\right)^{-14} = \left(\frac{5}{3}\right)^{8x}$$

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

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

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

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



112. Simplify

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

177. Find *x*.

(4)
$$\frac{-6}{7}^{x-7} = 1$$
(5)
$$2^{3x} = 8^{2x+1}$$