

Exercise-11

$$1) a = \sqrt{4.694} + \frac{1}{12}$$

$$= \sqrt{469.4 \times 10^{-2}} + \frac{1}{12}$$

$$= \sqrt{\frac{469 \times 9 + 4}{9 \times 10^2}} + \frac{1}{12}$$

$$= \sqrt{\frac{4225}{9 \times 10^2}} + \frac{1}{12}$$

$$= \sqrt{\frac{13^2 \times 5^2}{3^2 \times 10^2}} + \frac{1}{12}$$

$$= \frac{13 \times 5}{3 \times 10} + \frac{1}{12}$$

$$= \frac{13 \times 2}{6 \times 2} + \frac{1}{12}$$

$$= \frac{26+1}{12}$$

$$a = \frac{27+3}{12 \div 3}$$

$$a = \frac{9}{4}$$

Thus,  $a^{-1} = \frac{4}{9}$  (b)

$$2) x = \frac{1}{b(a+c)-1}$$
$$= \frac{1}{2^5 \left( \frac{1}{2^{10}} + \frac{1}{2^5} \right) - 1}$$
$$= \frac{1}{\frac{1}{2^5} + 1 - 1}$$
$$= \frac{1}{\left( \frac{1}{2^5} \right)}$$

Thus,  $x = 2^5$  (a)

$$3) c = \frac{\sqrt{252}}{\sqrt{112}} - \frac{\sqrt{45}}{\sqrt{245}} + \frac{5}{4}$$
$$= \frac{\sqrt{6 \times 7}}{\sqrt{4^2 \times 7}} - \frac{\sqrt{3 \times 5}}{\sqrt{7^2 \times 5}} + \frac{5}{4}$$

$$= \frac{6}{4} - \frac{3}{7} + \frac{5}{4}$$

$$= \frac{11}{4} - \frac{3}{7}$$

$$= \frac{77-12}{28}$$

Thus,  $c = \frac{65}{28}$  (a)