Compound Interest Ex 14.3 Q15

Answer :

Let the rate percent per annum be R.
Because interest is compounded every six months, n will be 3 for 1.5 years.
Now,

$$A = P\left(1 + \frac{R}{200}\right)^n$$

$$2,315.25 = 2,000\left(1 + \frac{R}{200}\right)^3$$

$$\left(1 + \frac{R}{200}\right)^3 = \frac{2,315.25}{2,000}$$

$$\left(1 + \frac{R}{200}\right)^3 = 1.157625$$

$$\left(1 + \frac{R}{200}\right)^3 = (1.05)^3$$

$$1 + \frac{R}{200} = 1.05$$

$$\frac{R}{200} = 0.05$$

$$= 10$$

Thus, the required rate is 10% per annum.

Compound Interest Ex 14.3 Q16

Answer :

Let the rate percent per annum be R.
Then,

$$A = P\left(1 + \frac{R}{100}\right)^n$$

$$2P = P\left(1 + \frac{R}{100}\right)^3$$

$$\left(1 + \frac{R}{100}\right)^3 = 2$$

$$\left(1 + \frac{R}{100}\right) = 1.2599$$

$$\frac{R}{100} = 0.2599$$

$$R = 25.99$$

Thus, the required rate is 25.99% per annum.

Compound Interest Ex 14.3 Q17

Answer :

Let the rate percent per annum be R.
Then,

$$A = P(1+R)^{2n}$$

$$4P = P\left(1+\frac{R}{200}\right)^{4}$$

$$\left(1+\frac{R}{200}\right)^{4} = 4$$

$$\left(1+\frac{R}{200}\right) = 1.4142$$

$$\frac{R}{200} = 0.4142$$

$$R = 82.84$$

Thus, the required rate is 82.84%.

********** END **********