

Exercise 3(A)

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1. How much money will be required to buy 400, Rs.12.50 shares at a premium of Rs.1?

Solution:

Given,

The number of shares required to be bought = 400

And, Rs 12.50 shares at a premium of Rs 1 means;

Nominal value of the share is Rs. 12.50

And its market value = Rs 12.50 + Rs 1 = Rs 13.50

So, the money required to buy 1 share = Rs 13.50

Thus,

The money required to buy 400 shares = $400 \times \text{Rs } 13.50 = \text{Rs } 5400$

2. How much money will be required to buy 250, Rs.15 shares at a discount of Rs.1.50?

Solution:

The number of shares to be bought is 250.

And, Rs 15 shares at a discount of Rs 1.50 means

Nominal value of the share is Rs 15 and

Its market value = $\text{Rs } 15 - \text{Rs } 1.50 = \text{Rs } 13.50$

Thus,

The money required to buy 250 shares = $250 \times \text{Rs } 13.50 = \text{Rs } 3375$

3. A person buys 120 shares at a nominal value of Rs 40 each, which he sells at Rs 42.50 each. Find his profit and profit percent.

Solution:

Given,

The nominal value of each share is Rs 40

So, the nominal value of 120 shares = $\text{Rs } 40 \times 120 = \text{Rs } 4,800$

And, the market value of 120 shares = $\text{Rs } 42.50 \times 120 = \text{Rs } 5,100$

Thus, his profit = $\text{Rs } 5,100 - \text{Rs } 4,800 = \text{Rs } 300$

And the profit percentage is given by,

Profit (%) = $300/4800 \times 100 = 6.25\%$

4. Find the cost of 85 shares of Rs 60 each when quoted at Rs 63.25.

Solution:

Given,

Market value of 1 share = Rs 63.25

So, the market value of 85 shares = $\text{Rs } 63.25 \times 85 = \text{Rs } 5,376.25$

5. A man invests Rs800 in buying Rs5 shares and when they are selling at a premium of Rs1.15, he sells all the shares. Find his profit and profit percent.

Solution:

Nominal value of 1 share = Rs 5
Market value 1 share = Rs 5 + Rs 1.15 = Rs 6.15
Total money invested = Rs 800
So, the number of shares purchased = $800/5 = 160$
And,
Market value of 160 shares = $160 \times 6.15 = \text{Rs } 984$
Thus, his profit = $\text{Rs } 984 - \text{Rs } 800 = \text{Rs } 184$
And the profit percentage is given by
Profit (%) = $184/800 \times 100 = 23\%$

**6. Find the annual income derived from 125, Rs.120 shares paying 5% dividend.
Solution:**

Given,
The nominal value of 1 share = Rs 120
So, the nominal value of 125 shares = $125 \times \text{Rs } 120 = \text{Rs } 15,000$
Now,
Dividend = 5% of Rs 15,000
 $\Rightarrow 5/100 \times 15000 = \text{Rs } 750$
Thus, the annual income is Rs 750

7. A man invests Rs 3,072 in a company paying 5% per annum, when its Rs 10 share can be bought for Rs 16 each. Find:

- (i) his annual income
- (ii) his percentage income on his investment.

Solution:

Given,
Market value of 1 share = Rs 16
Nominal value of 1 share = Rs 10
And the money invested = Rs 3,072
So, the number of shares purchased = $3072/16 = 192$
And, the nominal value of 192 shares = $\text{Rs } 10 \times 192 = \text{Rs } 1,920$
Therefore,

- (i) The annual income = 5% of Rs 1,920
 $= 5/100 \times 1920$
 $= \text{Rs } 96$
- (ii) Income % = $96/3072 \times 100 = 3.125\% = 3\frac{1}{8}\%$

Exercise 3(B)

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1. A man buys 75, Rs 100 shares paying 9 percent dividend. He buys shares at such a price that he gets 12 percent of his money. At what price did he buy the shares?

Solution:

Given,

Nominal value of 1 share = Rs100

So, the nominal value of 75 shares = $100 \times 75 = \text{Rs } 7,500$

And, Dividend % = 9 %

Thus, dividend = 9 % of Rs 7,500
 $= \frac{9}{100} \times \text{Rs } 7,500 = \text{Rs } 675$

Let's consider the market price of 1 share = Rs y

Then the market price of 75 shares = Rs 75y

And, Profit % on investment = 12%

12% of 75y = Rs 657

$\frac{12}{100} \times 75y = \text{Rs } 657$

y = Rs 75

Therefore, the price of his shares is Rs 75 each

2. By purchasing Rs 25 gas shares for Rs 40 each, a man gets 4 percent profit on his investment. What rate percent is the company paying? What is his dividend if he buys 60 shares?

Solution:

Given,

Nominal value of 1 share = Rs25

Market value of 1 share = Rs40

And, the profit% on investment = 4%

Then profit on 1 share = 4% of Rs 40 = Rs 1.60

Thus,

Dividend % = $\frac{1.60}{25} \times 100 = 6.4\%$

Next,

If the number of shares purchased = 60

Then, the dividend on 60 shares = $60 \times \text{Rs } 1.60 = \text{Rs } 96$

3. Hundred rupee shares of a company are available in the market at a premium of Rs 20. Find the rate of dividend given by the company, when a man's return on his investment is 15%.

Solution:

Given,

Nominal value of 1 share = Rs 100

And the market value of 1 share = Rs100 + Rs 20 = Rs120 (as the premium is Rs 20)

Also given, the profit % on investment of 1 share = 15%

Then profit = 15% of Rs 120 = Rs 18

Therefore,

Dividend % = $\frac{18}{100} \times 100 = 18\%$

4. Rs 50 shares of a company are quoted at a discount of 10%. Find the rate of dividend given by the company, the return on the investment on these shares being 20 percent.

Solution:

Given,

Nominal value of 1 share = Rs 50

Discount on each share = 10 %

So, the market value of 1 share = Rs50 - 10% of Rs50
= Rs 50 – Rs 5 = Rs 45

Also given, Profit % on investment = 20%

Then the profit on 1 share = 20% of Rs 45 = Rs 9

Therefore,

Dividend % = $\frac{9}{50} \times 100 = 18 \%$

5. A company declares 8 percent dividend to the shareholders. If a man receives Rs 2,840 as his dividend, find the nominal value of his shares.

Solution:

Given,

Dividend % = 8 %

And, the dividend is Rs 2,840

Let the nominal value of shares be Rs y

Then,

8% of y = Rs 2,840

$(\frac{8}{100}) \times y = \text{Rs } 2,840$

y = Rs 35,500

Thus, the nominal value of the man's share is Rs 35,500

6. How much should a man invest in Rs 100 shares selling at Rs 110 to obtain an annual income of Rs 1,680, if the dividend declared is 12%?

Solution:

From the question,

Nominal value of 1 share = Rs100

And, the market value of 1 share = Rs110

Let the number of shares purchased = n

Then the nominal value of n shares = Rs (100n)

Dividend % = 12%

Given that the dividend = Rs1,680

12 % of 100n = Rs 1,680

$\frac{12}{100} \times 100n = \text{Rs } 1680$

$$\Rightarrow n = \frac{1,680 \times 100}{12 \times 100} = 140$$

So, the market value of 140 shares = $140 \times 110 = \text{Rs } 15,400$

Therefore the investment of the man should be Rs 15,400

7. A company declares a dividend of 11.2% to all its share-holders. If its Rs 60 share is available in the market at a premium of 25%, how much should Rakesh invest, in buying the shares of this company, in order to have an annual income of Rs 1,680?

Solution:

Given,

Nominal value of 1 share = Rs60

Market value of 1 share = Rs 60 + 25% of Rs 60
= Rs 60+ Rs 15= Rs 75

Let the number of shares purchased be n

Then, the nominal value of n shares = Rs (60n)

Dividend % = 11.2%

Given that the dividend = Rs 1,680

So, 11.2% of 60n = Rs 1,680

$11.2/100 \times 60n = \text{Rs } 1,680$

$$\Rightarrow n = \frac{1,680 \times 100}{11.2 \times 60} = 250$$

Then, the market value of 250 shares will be = $250 \times 75 = \text{Rs } 18,750$

Therefore, the investment of Rakesh should be Rs 18,750

8. A man buys 400, twenty-rupee shares at a premium of Rs 4 each and receives a dividend of 12%. Find:

- (i) the amount invested by him.
- (ii) his total income from the shares.
- (iii) percentage return on his money.

Solution:

Given,

The nominal value of 1 share = Rs 20

Market value of 1 share = Rs 20 + Rs 4 = Rs 24

No. of shares purchased = 400

Nominal value of 400 shares = $400 \times 20 = \text{Rs } 8,000$

(i) Market value of 400 shares = $400 \times 24 = \text{Rs } 9,600$

(ii) Dividend% = 12%

Dividend = 12% of Rs 8,000
= $12/100 \times \text{Rs } 8,000 = \text{Rs } 960$

Thus, the total income from the shares is Rs 960

(iii) Percentage return on his money is

Return % = $\text{income}/\text{investment} \times 100$
= $(960/9600) \times 100 = 10\%$

9. A man buys 400, twenty-rupee shares at a discount of 20% and receives a return of 12% on his money. Calculate:

- (i) the amount invested by him.
(ii) the rate of dividend paid by the company.

Solution:

Given,

The nominal value of 1 share = Rs 20

Market value of 1 share = Rs 20 – (20% of Rs 20)
= Rs 20 – Rs 4 = Rs 16

Number of shares purchased = 400

Nominal value of 400 shares = 400 x 20 = Rs 8,000

(i) Market value of 400 shares = 400 x 16 = Rs 6,400

(ii) Return% = 12%

Income = 12% of Rs 6,400
= $\frac{12}{100} \times \text{Rs } 6,400 = \text{Rs } 768$

And,

(iii) The rate of dividend is

Dividend % = $\left(\frac{\text{income}}{\text{nominal value}}\right) \times 100$
= $\left(\frac{768}{8000}\right) \times 100 = 9.6\%$

10. A company, with 10,000 shares of Rs 100 each, declares an annual dividend of 5%.

- (i) What is the total amount of dividend paid by the company?
(ii) What should be the annual income of a man who has 72 shares in the company?
(iii) If he received only 4% of his investment, find the price he paid for each share.

Solution:

Given,

Nominal value of 1 share = Rs 100

Then, nominal value of 10,000 shares = 10,000 x Rs 100 = Rs 10,00,000

(i) Dividend % = 5%

Dividend = 5% of Rs 10,00,000
= $\frac{5}{100} \times \text{Rs } 10,00,000 = \text{Rs } 50,000$

Thus, a dividend amount of Rs 50,000 is paid by the company.

(ii) Nominal value of 72 shares = Rs 100 x 72 = Rs 7,200

Dividend = 5% of Rs 7,200
= $\frac{5}{100} \times \text{Rs } 7,200 = \text{Rs } 360$

Thus, the annual income of the man is Rs 360

(iii) Let's consider the market value of 1 share = Rs y

Then market value of 10,000 shares = Rs (10,000y)

And the return% = 4%

So, 4% of Rs (10,000y) = Rs 50,000
= $\frac{4}{100} \times 10,000y = \text{Rs } 50,000$

y = Rs 125

Thus, the price for each share is Rs 125

Exercise 3(C)

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1. By investing Rs.45,000 in 10% Rs.100 shares, Sharad gets Rs.3,000 as dividend. Find the market value of each share.

Solution:

We know that,

Annual income from 1 share = 10% of Rs 100 = Rs 10

Given, the total income = Rs 3000 (as dividend)

Hence,

The number of shares bought = Total annual income/ Annual income from 1 share
 $= 3000/10 = 300$

Therefore,

The market value of one share = Total investment/ Number of shares
 $= 4500/300$
 $= \text{Rs } 150$

2. Mrs. Kulkarni invests Rs.1, 31,040 in buying Rs.100 shares at a discount of 9%. She sells shares worth Rs.72,000 at a premium of 10% and the rest at a discount of 5%. Find her total gain or loss on the whole.

Solution:

Given,

Investment = Rs 1,31,040

Nominal value of 1 share = Rs 100

Discount = 9% of Rs 100 = Rs 9

So, the market value of 1 share = Rs 100 – Rs 9 = Rs 91

Then, the number of shares purchased = Investment/ market value of 1 share
 $= 1,31,040/ 91 = 1440$

Number of shares worth Rs 72,000 = $72,000/100 = 720$

Now, Mrs. Kulkarni sells 720 shares at a premium of 10%

Then, the market value of 1 share = Rs 100 + Rs 10 = Rs 110

So, the selling price of 720 shares = $720 \times \text{Rs } 110$

The number of remaining shares = $1440 - 720 = 720$

And, she sells 720 shares at a discount of 5%

Now, the market value of 1 share = Rs 100 – Rs 5 = Rs 95

The selling price of 730 shares = $720 \times \text{Rs } 95 = \text{Rs } 68,400$

Total selling price = Rs(79,200 + 68,400) = Rs 1,47,600

Thus, the total gain = Total selling price – Total investment
 $= \text{Rs } (1,47,600 - 1,31,040)$
 $= \text{Rs } 16560$

3. A man invests a certain sum on buying 15% Rs.100 shares at 20% premium. Find :

(i) His income from one share

(ii) The number of shares bought to have an income, from the dividend, Rs.6480

(iii) Sum invested

Solution:

- (i) Dividend on one share = 15% of Rs 100
 $= \text{Rs } (15/100 \times 100) = \text{Rs } 15$
Hence, the income from one share is Rs 15
- (ii) Number of shares bought by the man = annual income/ dividend on one share
 $= 6480/ 15$
 $= \text{Rs } 432$
- (iii) Given that the man bought shares of Rs 100 at 20% premium, the market value of one share
 $= \text{Rs } (1 + 20/100) \times 100$
 $= \text{Rs } (120/100 \times 100)$
 $= \text{Rs } 120$
His total investment = number of shares x market value of one share
 $= 432 \times \text{Rs } 120$
 $= \text{Rs } 51, 840$

4. Gagan invested 80% of his savings in 10% Rs.100 shares at 20% premium and the rest of his savings in 20% Rs.50 shares at Rs.20% discount. If his incomes from these shares is Rs.5,600 calculate:

- (i) His investment in shares on the whole**
(ii) The number of shares of first kind that he bought
(iii) Percentage return, on the shares bought on the whole.

Solution:

- (i) Let's assume the total savings be Rs x (which is the investment)
For the 1st part – 80% of his savings
Nominal value of each share = Rs 100
Market value of each share = $100 + 20\% \text{ Rs } 100 = 100 + 20 = \text{Rs } 120$
So, the number of shares bought will be $= 0.8x/120$
Dividend on each share = 10% of 100 = Rs 10
Hence, the total dividend = $10 \times (0.8x/120) = \text{Rs } 0.8x/12$

Now, the 2nd part (remaining 20% of savings)
Nominal value of each share = Rs 50
Market value of each = $50 - 20\% \text{ Rs } 50 = 50 - 10 = \text{Rs } 40$
So, the number of shares bought = $0.2x/ 40$
Dividend on each share = 20% of 50 = Rs 10
Hence, the total dividend = $10 \times 0.2x/40 = \text{Rs } 0.2x/4$
Given that dividend (incomes) from both the investments are Rs 5600
So, we have
 $\text{Rs } 0.8x/12 + \text{Rs } 0.2x/4 = 5600$
 $(0.8x + 0.6x)/12 = 5600$
 $x = (5600 \times 12)/ 1.4$
 $x = 48,000$

Therefore, the investment in shares together as his savings is Rs 48,000

(ii) Now, the number of shares bought = $0.8x/120 = (0.8 \times 48,000)/120 = \text{Rs } 320$

(iii) The total dividend or the return = $0.8x/12 + 0.2x/4$
 $= 0.8(48,000)/12 + 0.2(48,000)/4$
 $= \text{Rs. } 5600$

Thus, the return percentage = $5600/48000 \times 100 = 11\frac{2}{3}\%$

5. Ashwarya bought 496, Rs.100 shares at Rs.132 each, find:

(i) Investment made by her

(ii) Income of Ashwarya from these shares, if the rate of dividend is 7.5%.

(iii) How much extra must Ashwarya invest in order to increase her income by Rs.7,200

Solution:

Given,

(i) The nominal value of each share = Rs 100

Market price of each share = Rs 132

Number of shares bought = 496

So, the investment made by her = $496 \times \text{Rs } 132 = \text{Rs } 65,472$

(ii) Dividend on 1 share = 7.5% of Rs 100 = Rs 7.5

Thus, the income of Ashwarya from these shares = $496 \times 7.5 = \text{Rs } 3,720$

(iii) If she wants to increase her income by Rs 7,200

Then the number of shares she should buy = $\frac{\text{increase in the income}}{\text{income of one share}}$
 $= \frac{7,200}{7.5} = 960$

Therefore, she should invest an extra of = $960 \times \text{Rs } 132 = \text{Rs } 1,26,720$

6. Gopal has some Rs.100 shares of company A, paying 10% dividend. He sells a certain number of these shares at a discount of 20% and invests the proceeds in Rs.100 shares at Rs.60 of company B paying 20% dividend. If his income, from the shares sold, increases by Rs.18,000, find the number of shares sold by Gopal.

Solution:

Given,

The nominal value of each share = Rs 100

Rate of dividend = 10%

Dividend on each share = 10% of Rs 100 = Rs 10

Then, the dividend on x shares will be Rs 10x

Selling price of each share = Rs 100 = 20% of Rs 100 = Rs 80

And, the amount obtained on selling x shares = Rs 80x

Given that, the proceeds are invested in Rs 100 shares at Rs 60 of company B paying 20% dividend

Now,

Nominal value of each share = Rs 100

Market value of each share = Rs 60

So, the number of shares bought by the man = amount obtained/ Market value of each share

$$= 80x/60 = 4x/3$$

Dividend on each share = 20% of Rs 100 = Rs 20

So the total dividend received = Dividend on each share x number of shares

$$= 20 \times 4x/3 = 80x/3$$

Given, the increase in the income = Rs 18,000

Thus,

$$80x/3 - 10x = 18,000$$

$$50x/3 = 18,000$$

$$x = \text{Rs } 1080$$

Therefore, the number of shares sold by Gopal is Rs 1080

7. A man invests a certain sum of money in 6% hundred-rupee shares at Rs.12 premium. When the shares fell to Rs.96, he sold out all the shares bought and invested the proceed in 10%, ten-rupee shares at Rs.8. If the change in his income is Rs.540, Find the sum invested originally
Solution:

Let's assume the original sum invested to be Rs x

Then the number of Rs 100 shares purchased at premium of Rs 12 will be

$$= x / (100 + 12) = x/112$$

Given,

The income per original share is 6% = Rs 6

So, the total income = (Number of shares) x (earning per share)

$$= (x/112) \times 6 = 3x/56$$

Proceeds from the sale of original shares at Rs 96 per share

= (number of shares) x 96 = $x/112 \times 96 = 6x/7$

Number of Rs 10 shares purchased at Rs 8 per share from the proceeds of original shares

= (Proceeds from sale of original shares)/8 = $(6x/7)/8 = 3x/28$

Income per new share of Rs 10 at 10% = $10/100 \times 10 = \text{Rs } 1$

Thus, the total income from the new shares = Number of shares x income per share

$$= 3x/28 \times 1 = 3x/28$$

The change in income is Rs 540 (given)

Income from old shares – Income from new shares = Rs 540

So,

$$540 = 3x/28 - 3x/56 = 3x/56$$

$$x = 540 / (3/56) = 10,080$$

Therefore, the original sum invested is Rs 10,080

8. Mr. Gupta has a choice to invest in ten-rupee shares of two firms at Rs13 or at Rs16. If the first firm pays 5% dividend and the second firm pays 6% dividend per annum, find:

(i) which firm is paying better.

(ii) if Mr. Gupta invests equally in both the firms and the difference between the returns from them is Rs 30, find how much, in all, does he invest.

Solution:

(i) The first firm:

Nominal value of 1 share = Rs 10
Market value of 1 share = Rs 13
Dividend = 5% of Rs 10 = Rs 0.50
Thus, the income % = $\frac{\text{Income}}{\text{Investment}} \times 100$
 $= \frac{0.50}{13} \times 100 = 3.846\%$

Now,

The second firm:

Nominal value of 1 share = Rs 10
Market value of 1 share = Rs 16
Dividend % = 6 %
Thus, income % = $\frac{\text{income}}{\text{investment}} \times 100$
 $= \frac{0.60}{16} \times 100$
 $= 3.75\%$

Therefore, the first firm is paying better than second firm

(ii) Let money invested in each firm = Rs y

For 1st firm

Number of shares purchased = $\frac{y}{13}$ shares

Total dividend = Rs 0.50 x $\frac{y}{13}$ = Rs $\frac{y}{26}$

For 2nd firm

Number of shares purchased = $\frac{y}{16}$ shares

Total dividend = Rs 0.60 x $\frac{y}{16}$ = Rs $\frac{3y}{80}$

Given the difference of both dividend = Rs 30

$\frac{y}{26} - \frac{3y}{80} = \text{Rs } 30$

$\frac{y}{1040} = \text{Rs } 30$

$y = \text{Rs } 30 \times 1040 = \text{Rs } 31,200$

Therefore, total money invested in both firm = Rs 31,200 x 2
= Rs 62,400

9. Ashok invested Rs.26,400 in 12%, Rs.25 shares of a company. If he receives a dividend of Rs.2,475, find the:

(i) number of shares he bought.

(ii) market value of each share.

Solution:

(i) Given, total dividend = Rs 2,475

So, the dividend on each share = 12% of Rs 25 = $\frac{12}{100} \times \text{Rs } 25 = \text{Rs } 3$

Thus, the number of shares bought = $\frac{\text{Total dividend}}{\text{Dividend on 1 share}}$
 $= \frac{2475}{3} = 825$

(ii) Market value of 825 shares = Rs 26,400

Therefore, market value of each share = $\frac{\text{total investment}}{\text{number of shares}} = \frac{26400}{825} = \text{Rs } 32$

10. A man invested Rs45,000 in 15% Rs100shares quoted at Rs125. When the market value of these shares rose to Rs140, he sold some shares, just enough to raise Rs8,400. Calculate:

(i)the number of shares he still holds;

(ii) the dividend due to him on these remaining shares.

Solution:

- (i) Total investment = Rs 45,000
And the market value of 1 share = Rs 125
Thus, the number of shares purchased = $45000/125 = 360$ shares
Nominal value of 360 shares = Rs 100 x 360 = Rs 36,000
Now, let the number of shares sold be n
Then, the sale price of these n shares is = Rs 8,400
So,
 $n = 8400/140 = 60$ shares
Thus, the number of shares he still holds is $360 - 60 = 300$
- (ii) Nominal value of 300 shares = Rs 100 x 300 = Rs 30,000
And, dividend% = 15%
Dividend = 15% of Rs 30,000
= $15/100 \times \text{Rs } 30,000 = \text{Rs } 4,500$