

The RLX Company just paid a dividend of \$1.40 per share on its stock. The dividends are expected to grow at a constant rate of 5 percent per year indefinitely. Investors require a return of 12 percent on the company's stock.

- a. What is the current stock price? (Do not round intermediate calculations and round your answer to 2 decimal places, e.g., 32.16.)
- b. What will the stock price be in 3 years? (Do not round intermediate calculations and round your answer to 2 decimal places, e.g., 32.16.)
- c. What will the stock price be in 9 years? (Do not round intermediate calculations and round your answer to 2 decimal places, e.g., 32.16.)

a. Current price	
b. Stock price in 3 years	
c. Stock price in 9 years	

References

Worksheet

Learning Objective: 08-01 Explain how stock prices depend on future dividends and dividend growth.

Difficulty: 1 Basic

Section: 8.1 Common Stock Valuation

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- b. What will the stock price be in 3 years? (Do not round intermediate calculations and round your answer to 2 decimal places, e.g., 32.16.)
- c. What will the stock price be in 9 years? (Do not round intermediate calculations and round your answer to 2 decimal places, e.g., 32.16.)

a. Current price	\$ 21.00 \pm 1%
b. Stock price in 3 years	\$ 24.31 \pm 1%
c. Stock price in 9 years	\$ 32.58 \pm 1%

Explanation:

Note: Intermediate answers are shown below as rounded, but the full answer was used to complete the calculation.

The constant dividend growth model is:

$$P_t = D_t \times (1 + g)/(R - g)$$

So the price of the stock today is:

$$P_0 = D_0(1 + g)/(R - g)$$

$$P_0 = \$1.40(1.05)/(.12 - .05)$$

$$P_0 = \$21.00$$

The dividend at Year 4 is the dividend today times the FVIF for the growth rate in dividends and four years, so:

$$P_3 = D_3(1 + g)/(R - g) = D_0(1 + g)^4/(R - g)$$

$$P_3 = \$1.40(1.05)^4/(\cdot 12 - \cdot 05)$$

$$P_3 = \$24.31$$

We can do the same thing to find the dividend in Year 10, which gives us the price in Year 9, so:

$$P_9 = D_9(1 + g)/(R - g) = D_0(1 + g)^{10}/(R - g)$$

$$P_9 = \$1.40(1.05)^{10}/(\cdot 12 - \cdot 05)$$

$$P_9 = \$32.58$$

There is another feature of the constant dividend growth model: The stock price grows at the dividend growth rate. So, if we know the stock price today, we can find the future value for any time in the future we want to calculate the stock price. In this problem, we want to know the stock price in three years, and we have already calculated the stock price today. The stock price in three years will be:

$$P_3 = P_0(1 + g)^3$$

$$P_3 = \$21.00(1 + .05)^3$$

$$P_3 = \$24.31$$

And the stock price in 9 years will be:

$$P_9 = P_0(1 + g)^9$$

$$P_9 = \$21.00(1 + .05)^9$$

$$P_9 = \$32.58$$