Stock Valuation Practice Problems

1. The Bulldog Company paid $1.5 of dividends this year. If its dividends are expected to grow at a rate of 3 percent per year, what is the expected dividend per share for Bulldog five years from today?
2. The current price of XYZ stock is $25 per share. If XYZ's current dividend is $1 per share and investors' required rate of return is 10 percent, what is the expected growth rate of dividends for XYZ, based on the constant growth dividend valuation model?
3. Consider each of the following stocks, and solve for the missing element:

Stock	Current year's dividend	Expected growth in dividends	Required rate of return	Value of a share of stock
A	$1.00	3%	5%	
B		4%	6%	$26.000
C	$1.00		10%	$21.000
D	$0.75	2%		$7.650
E	$1.10	4%	10%	

4. Identify the relation between a stock's price and the factors that determine the price, based on the constant-growth dividend valuation model:

Factor	Relationship with share price Positive or Negative
Current dividend	
Expected growth rate of dividends	
Required rate of return	

For example, the relationship is positive if an increase in the factor results in an increase in the share price.

Solutions to Stock Valuation Practice Problems

1. $D_5 = D_0 (1 + g)^5 = \$1.5 (1 + 0.03)^5 = \$1.5 \times 1.15927 =$ **$1.73891**
2. $P_0 = D_0 (1 + g) \div (r_e - g)$
   $\$25 = \$1 (1 + g) / (0.10 - g)$
   $\$25 (0.10\text{-}g) = \$1 + g$
   $\$2.5 - 25g = \$1 + g$
   $\$1.5 = 26\ g$
   g = 5.7692%
3.

Stock	Current year's dividend	Expected growth in dividends	Required rate of return	Value of a share of stock
A	$1.00	3%	5%	**$51.500**
B	**$0.50**	4%	6%	$26.000
C	$1.00	**5%**	10%	$21.000
D	$0.75	2%	**12%**	$7.650
E	$1.10	4%	10%	**$19.067**

4.

$$P_0 = \frac{D_0(1+g)}{r_e - g}$$

Factor	Relationship with share price Positive or Negative
Current dividend	**Positive**
Expected growth rate of dividends	**Positive**
Required rate of return	**Negative**