Solution to activity 4.4

Step 1 Determining value of company using the fair rate of return provided

YEAR			0	1	2	3
			Rand	Rand	Rand	Rand
Expected dividend to be paid						
YEAR 1	1 500 000 x 1,15			1 725 000		
YEAR 2	1 725 000 x 1,10				1 897 500	
YEAR 3	1 897 500 x 1,08					2 049 300
Gordon's dividend growth model year 4 and onward ①						21 722 580
			0	1 725 000	1 897 500	23 771 880
Fair rate of return ②		16,00%		0,862	0,743	0,641
Net present value		**18 134 568**	0	1 486 950	1 409 843	15 237 775

Calculation

① $P_3 = \frac{D_4}{k_e - g}$

$= \frac{R2\ 049\ 300 \times 1{,}06}{16\% - 6\%}$

$= \frac{R2\ 172\ 258}{10\%}$

$= R21\ 722\ 580$

② Calculate the Present value factor by making use of the following formula:

PV factor $= \frac{1}{(1+i)^n}$

Alternative method

Input in calculator

CF0	0
CF1	1 725 000
CF2	1 897 500
CF3	23 771 880
IR	16%
Calc PV	18 126 858

Step 2 Determine pro rata shareholding

10% shareholding	=	R18 134 568 x 10%	OR	=	R18 126 858 x 10%
	=	R1 813 457		=	R1 812 686

Step 3 Adjustment for minority holding

Apply a 12% # discount	=	R1 813 457 x 88%	OR	=	R1 812 686 x 88%
	=	R1 811 980 x 88%		=	R1 594 542

Conclusion

You should offer the seller no more than R1 595 842 / R1 595 164 to purchase his 10% minority shares.

Note #:

We did not provide you with the size of the minority discount adjustment, but left it to your own judgement. As long as you used a reasonable adjustment, the marker will mark the discount rate you used in your calculations.