

FINANCE 125  
HOUR EXAM III  
SPRING 2015  
S. G. BUELL

NAME KEY

SECTION REGISTERED \_\_\_\_\_

TO RECEIVE CREDIT YOU MUST CLEARLY SHOW ALL OF YOUR WORK (i.e., EQUATIONS). YOU MAY NOT JUST LIST THE CALCULATOR BUTTONS YOU PRESSED.

[1] (30 points)

Today you buy 100 shares of the Acme Company's \$100 par value convertible preferred stock. The preferred stock pays an annual dividend of 6% and is convertible into Acme's common stock at a conversion price of \$25 per share. The preferred is priced to yield 5% a year.

Acme's common stock dividends are expected to grow at 30% for the next 5 years and then at 20% for another 6 years before stabilizing at a 4% rate for the indefinite future. Yesterday Acme paid a 40 cents common stock dividend. Investors require a return of 15% on common stock of Acme's risk-class.

{a} Calculate the IRR you earn if all forecasts hold and you convert your preferred stock after 8 years.

{b} Calculate the IRR you earn if all forecasts hold and you convert your preferred stock after 20 years.

{c} Add a short answer question?????

What is Acme's cost of retained earnings?

PFD STOCK: \$100 PAR  $D = 6\% \Rightarrow .06 \times 100 = \$6.00/\text{SH}$

CONVERSION PRICE = \$25/SHARE

CONVERSION RATIO =  $100/25 = 4$  SHARES

YIELD = 5%

PRICE OF PFD =  $\frac{D}{i} = \frac{6}{.05} = \$120/\text{SHARE}$

(a) IRR<sub>8Y</sub>  $120 = 6(PVIFA - r_8 - 8) + \frac{143.83}{(1+r_8)^8}$

$r_8 = 6.94\%$

(b) IRR<sub>20</sub>  $120 = 6(PVIFA - r_{20} - 20) + \frac{238.71}{(1+r_{20})^{20}}$

$r_{20} = 7.33\%$