Solution to FIN 533 Homework
Due Thursday, September 9, 2009

1. Initial value = $\frac{20+12+90}{3}=40.67$ Time 1 value = $\frac{22+15+82}{3}=39.67$

   Rate of return = $\frac{39.67-40.67}{40.67}=-2.46\%$

2. Stocks A and B have the same prices and number of shares outstanding. Stock C has split 2 for 1—its price is half of what is was before and there are twice as many shares outstanding. Therefore, the price-weighted index should be the same at time 2 as it was at time 1. Solving for the new divisor

   $$39.67=\frac{22+15+41}{d}=39.67 \qquad d=1.97$$

3. Initial value = $(\$20\times 200)+(\$12\times 400)+(\$90\times 100)=\$17{,}800$

   Time 1 value = $(\$22\times 200)+(\$15\times 400)+(\$82\times 100)=\$18{,}600$

   Rate of return = $\frac{\$18{,}600-\$17{,}800}{\$17{,}800}=4.49\%$

4. Rate of return of stock A = $\frac{\$22-\$20}{\$20}=10\%$

   Rate of return of stock B = $\frac{\$15-\$12}{\$12}=25\%$

   Rate of return of stock C = $\frac{\$82-\$90}{\$82}=-8.89\%$

   Rate of return on the index = $\frac{10\%+25\%+-8.89\%}{3}=8.70\%$