

# Formulae

The following formulae will be used in business and management external assessment. A copy of the formulae will be provided for students in the examination.

## Formulae for ratio analysis

### Profitability ratios

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Sales revenue}} \times 100$$

$$\text{Net profit margin} = \frac{\text{Net profit before interest and tax}}{\text{Sales revenue}} \times 100$$

### Liquidity ratios

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\text{Acid test (quick) ratio} = \frac{\text{Current assets} - \text{stock}}{\text{Current liabilities}}$$

### **HL** Shareholder (stockholder) ratios

$$\text{Earnings per share} = \frac{\text{Net profit after interest and tax}}{\text{Number of ordinary shares}}$$

$$\text{Dividend yield} = \frac{\text{Dividends per share}}{\text{Market price}} \times 100$$

### Efficiency ratios

$$\text{Return on capital employed (ROCE)} = \frac{\text{Net profit before interest and tax}}{\text{Total capital employed}^*} \times 100$$

\*Capital employed = shareholders' funds + reserves + long-term liabilities

$$\text{Stock turnover} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

or

$$\text{Stock turnover (number of days)} = \frac{\text{Average stock}}{\text{Cost of goods sold}} \times 365$$

$$\text{HL Debtor days ratio (number of days)} = \frac{\text{Debtors}}{\text{Total sales revenue}} \times 365$$

$$\text{HL Creditor days ratio (number of days)} = \frac{\text{Creditors}}{\text{Total credit purchases}} \times 365$$

## Gearing ratio

$$\text{Gearing ratio} = \frac{\text{Loan capital}}{\text{Total capital employed}} \times 100$$

## Other formulae

### Investment appraisal

$$\text{Average rate of return} = \frac{\text{Net return (profit) per annum}}{\text{Capital outlay (cost)}} \times 100$$

$$\text{HL Net present value} = \text{Present value of return} - \text{original cost}$$

### Elasticity—HL only

$$\text{Price elasticity of demand} = \frac{\% \text{ Change in quantity demanded}}{\% \text{ Change in price}}$$

$$\text{Cross-elasticity of demand} = \frac{\% \text{ Change in quantity demanded of good A}}{\% \text{ Change in price of good B}}$$

$$\text{Income elasticity of demand} = \frac{\% \text{ Change in quantity demanded}}{\% \text{ Change in income}}$$

$$\text{Advertising elasticity of demand} = \frac{\% \text{ Change in quantity demanded}}{\% \text{ Change in advertising expenditure}}$$