## Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

**2.1**

the length of time; for the net cash flows from an investment to repay its initial cost

**2.2**

any two: ignores cash flows after the payback point; ignores the time value of money; does not measure profitability; relies on forecasts

**2.3**

cumulative: 15 000, 35 000 after 2 years; still needed 15 000 of year 3's 25 000; $15\,000 \div 25\,000 \times 12 = 7.2$ months; payback = **2 years 7 months**

**2.4**

total net cash flows = 70 000; $(70\,000 - 50\,000) \div 4 = 5\,000$ per year; ARR = $5\,000 \div 50\,000 \times 100 =$ **10**%

**2.5**

present values: 13 635, 16 520, 18 775, 6 830; total = 55 760; NPV = $55\,760 - 50\,000 =$ \$**5 760** (positive)

**3.1**

award up to [10]: machine A: payback 2 years 7 months, ARR 10%; machine B: cumulative 10 000, 25 000, 50 000: payback exactly 3 years; ARR = $(80\,000 - 50\,000) \div 4 \div 50\,000 \times 100 = 15\%$; A pays back sooner: important given the weak cash position; B is more profitable overall; non-financial: B cuts two jobs: lower morale, redundancy costs, image; B's higher quality may win customers; forecasts for later years are less certain; judgement, e.g. A if cash is the priority, B if long-term profit is; recommendation justified by the case

**3.2**

(a) sales revenue: $110 - 120 = -10$, adverse; materials: 36 against 40, 4 below budget, favourable; wages: 33 against 30, 3 above budget, adverse

(b) cost centre: a part of the firm where costs are recorded but no revenue is earned, e.g. the HR or maintenance department; profit centre: a part where both costs and revenues are recorded, so profit can be measured, e.g. a branch or a product line; correct examples from the case



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