



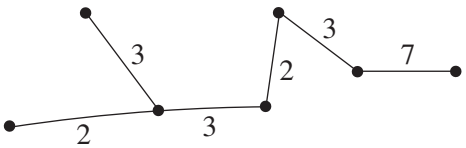
Trial Examination 2022

HSC Year 12 Mathematics Standard 2

Solutions and Marking Guidelines

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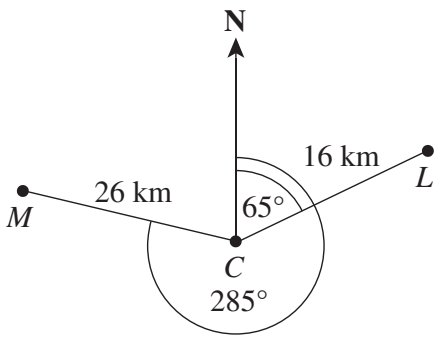
Answer and explanation	Syllabus content, outcomes and targeted performance bands															
<p>Question 7 C</p> $A = P(1 + r)^n$ <p>A = value of annuity, P = initial investment, r = interest rate, n = time period</p> $A = 25\,000 \left(1 + \frac{0.055}{2} \right)^{10}$ $= 32\,791.2758$ $\approx \$32\,791$	<p>MS–F4 Investments and Loans MS2–12–5, 12–10 Bands 3–4</p>															
<p>Question 8 C</p> $4x - 5y + 35 = 0$ $5y = 4x + 35$ $y = \frac{4}{5}x + 7 \rightarrow y = mx + b$ $\therefore m = \frac{4}{5}, b = 7$	<p>MS–A4 Types of Relationships MS2–12–6 Bands 3–4</p>															
<p>Question 9 D</p> <p>amount of IV solution = $\left(\frac{3500}{250} \right) \times 15$</p> $= 210 \text{ mL}$	<p>MS–M7 Rates and Ratios MS2–12–3 Bands 3–4</p>															
<p>Question 10 A</p> <p>mean = $\frac{\text{sum of all scores}}{\text{total number of scores}}$</p> <p>range = highest score – lowest score</p> <p>median = the middle score when scores are arranged in order</p> <p>mode = the score that has the highest frequency</p> <p>Comparing the old and new measures gives the following.</p> <table border="1" data-bbox="178 1482 844 1706"> <thead> <tr> <th></th> <th><i>Old</i></th> <th><i>New</i></th> </tr> </thead> <tbody> <tr> <td><i>Mean</i></td> <td>55.29</td> <td>55.45</td> </tr> <tr> <td><i>Range</i></td> <td>8</td> <td>8</td> </tr> <tr> <td><i>Median</i></td> <td>56</td> <td>56</td> </tr> <tr> <td><i>Mode</i></td> <td>56</td> <td>56</td> </tr> </tbody> </table> <p>The only measure that will change is the mean.</p>		<i>Old</i>	<i>New</i>	<i>Mean</i>	55.29	55.45	<i>Range</i>	8	8	<i>Median</i>	56	56	<i>Mode</i>	56	56	<p>MS–S4 Bivariate Data Analysis MS2–12–2, 12–9 Bands 3–4</p>
	<i>Old</i>	<i>New</i>														
<i>Mean</i>	55.29	55.45														
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<i>Median</i>	56	56														
<i>Mode</i>	56	56														

Answer and explanation	Syllabus content, outcomes and targeted performance bands
<p>Question 11 A</p> $A = \frac{1}{2}ab \sin C$ $= \frac{1}{2} \times 8 \times 12 \times \sin 32$ $= 25.4361$ $\approx 25.4 \text{ cm}^2$	<p>MS–M6 Non-right-angled Trigonometry MS2–12–4, 12–10 Bands 3–4</p>
<p>Question 12 C</p> <p>true measurement = 480 m</p> <p>precision/smallest unit = 10 m</p> <p>limits of accuracy = ± 5 m</p> <p>upper limit = $480 + 5$</p> $= 485 \text{ m}$ <p>lower limit = $480 - 5$</p> $= 475 \text{ m}$	<p>MS–M1 Applications of Measurement MS11–3 Bands 3–4</p>
<p>Question 13 C</p> <p>Dominic did 112 km of short-distance driving.</p> <p>fuel used while short-distance driving = 1.12×10.4</p> $= 11.648 \text{ L}$ <p>Dominic did $851 - 112 = 739$ km of long-distance driving.</p> <p>fuel used while long-distance driving = 7.39×7.2</p> $= 53.208 \text{ L}$ <p>total fuel used = $53.208 + 11.648$</p> $= 64.856$ $\approx 65 \text{ L}$	<p>MS–M7 Rates and Ratios MS2–12–9, 12–10 Bands 4–5</p>
<p>Question 14 B</p> <p>dividend per share = \$0.40</p> <p>dividend yield = $\frac{\text{dividend per share}}{\text{market price per share}} \times 100$</p> $= \frac{0.40}{4.60} \times 100$ $= 8.6957$ $\approx 9\%$	<p>MS–F4 Investments and Loans MS2–12–9, 12–10 Bands 4–5</p>
<p>Question 15 B</p>  <p>total length = $2 + 3 + 3 + 2 + 3 + 3 + 7$</p> $= 20$	<p>MS–N2 Network Concepts MS2–12–8, 12–9 Bands 4–5</p>

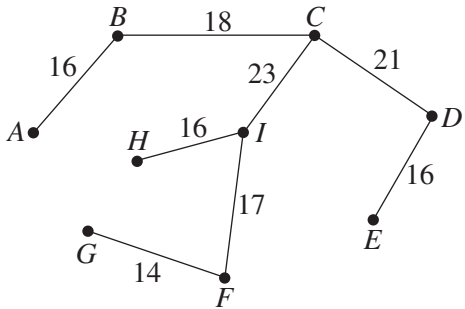
SECTION II

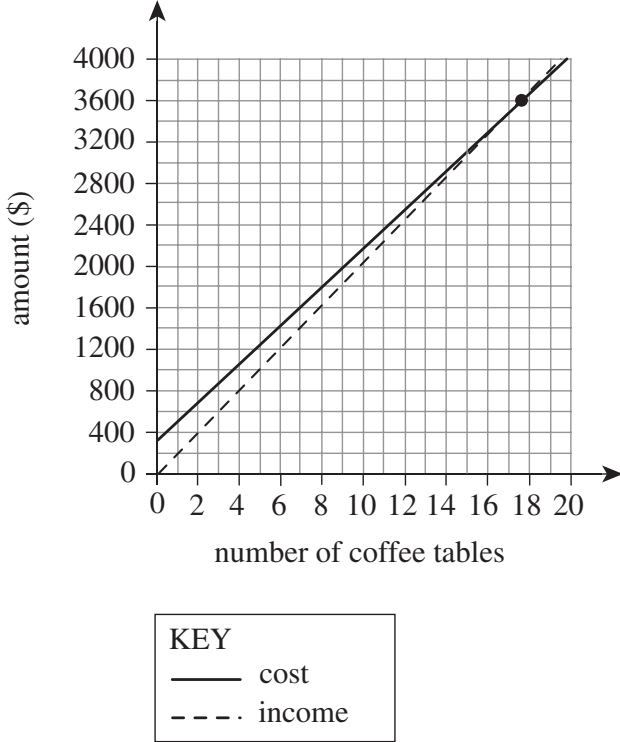
Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
Question 16	
<p>The area of the path is equal to the area of the large circle minus the area of the small circle. Using the formula $A = \pi r^2$ gives:</p> $(\pi \times 3.6^2) - (\pi \times 1.8^2) = 30.5363$ $\approx 30.5 \text{ m}^2$	<p>MS–M1 Applications of Measurement MS11–3, 11–4, 11–10 Bands 2–3</p> <ul style="list-style-type: none"> Substitutes into the formula AND calculates the area of the path 2 <hr/> <ul style="list-style-type: none"> Makes significant progress 1
Question 17	
<p>yearly salary = 6125×12 = \$73 500</p> <p>total loan repayments = $73\,500 \times 0.27$ = \$19 845</p>	<p>MS–F4 Investments and Loans MS2–12–5, 12–10 Bands 2–3</p> <ul style="list-style-type: none"> Provides the correct solution 1
Question 18	
<p>(a) extra tax = $27\,750 - 5092$ = \$22 658</p> <p>cents in the dollar = $\frac{22\,658}{0.325}$ = \$69 716.9231</p> <p>taxable income = $45\,000 + 69\,716.9231$ = 114 716.9231 \approx \$114 717</p>	<p>MS–F1 Money Matters MS11–5, 11–6, 11–10 Bands 3–4</p> <ul style="list-style-type: none"> Finds the amount of tax from the table AND calculates the taxable income 2 <hr/> <ul style="list-style-type: none"> Finds the amount of tax from the table 1
<p>(b) allowable tax deductions = $118\,000 - 114\,717$ = \$3283</p> <p><i>Note: Consequential on answer to Question 18(a).</i></p>	<p>MS–F1 Money Matters MS11–5, 11–6, 11–10 Bands 3–4</p> <ul style="list-style-type: none"> Provides the correct solution 1
Question 19	
<p>$P(\text{triple 4}) = \frac{1}{6} \times \frac{1}{6} \times \frac{1}{6}$</p> $= \frac{1}{216}$ <p>expected number of times = $\frac{1}{216} \times 1080$ = 5 times</p>	<p>MS–S2 Relative Frequency and Probability MS11–8, 11–9, 11–10 Bands 3–4</p> <ul style="list-style-type: none"> Finds the probability of triple 4 occurring AND calculates the expected number of times 2 <hr/> <ul style="list-style-type: none"> Finds the probability of triple 4 1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
Question 20	
(a) limit of accuracy = 1 m absolute error = ± 0.5 m	MS–M1 Applications of Measurement MS11–3, 11–4, 11–10 Bands 3–4 • States the limit of accuracy AND the absolute error2 <hr/> • States the limit of accuracy OR the absolute error.1
(b) absolute error = largest area – actual area $= (10.5 \times 6.5) - (10 \times 6)$ $= 68.25 - 60$ $= 8.25 \text{ m}^2$	MS–M1 Applications of Measurement MS11–3, 11–4, 11–10 Bands 3–4 • Finds the largest area and the actual area AND calculates the absolute error2 <hr/> • Makes significant progress1
Question 21	
$\frac{x+4}{5} - \frac{2(x-2)}{3} = 2$ $\frac{3(x+4) - 5(2x-4)}{15} = 2$ $3x + 12 - 10x + 20 = 30$ $-7x = -2$ $x = \frac{2}{7}$	MS–A4 Types of Relationships MS2–12–1, 12–6 Bands 3–4 • Provides the correct solution3 <hr/> • Attempts to find a common denominator AND makes some progress towards the correct solution2 <hr/> • Makes some progress towards finding a common denominator.1
Question 22	
$y = 4 - 2x$ (1) $3x + 4y = 1$ (2) Substituting (1) into (2) gives: $3x + 4(4 - 2x) = 1$ $3x + 16 - 8x = 1$ $-5x = -15$ $x = 3$ Substitute $x = 3$ into (1) gives: $y = 4 - 2(3)$ $= -2$ Therefore, the point of intersection is (3, -2).	MS–A4 Types of Relationships MS2–12–6 Bands 4–5 • Uses the substitution method AND provides the point of intersection2 <hr/> • Finds x OR y1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
<p>Question 23</p> <p>curved surface area = $2\pi rh$ $234 = 2 \times \pi \times r \times 13$ $234 = 26\pi r$ $r = \frac{234}{26\pi}$ $= 2.8648$</p> <p>$d = 2 \times 2.8649$ $= 5.7296$ $\approx 5.73 \text{ cm}$</p>	<p>MS–M1 Applications of Measurement MS11–3, 11–4, 11–10 Bands 4–5</p> <ul style="list-style-type: none"> Provides the correct solution3 <hr/> <ul style="list-style-type: none"> Substitutes into the surface area formula AND finds the radius of the cylinder2 <hr/> <ul style="list-style-type: none"> Makes some progress.1
<p>Question 24</p> <p>(a)</p> 	<p>MS–M6 Non-right-angled Trigonometry MS2–12–3, 12–4, 12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Draws a correct diagram1
<p>(b)</p> <p>$\angle MCN = 360^\circ - 285^\circ$ $= 75^\circ$ $\angle NCL = 65^\circ$ $\angle MCL = \angle MCN + \angle NCL$ $= 75 + 65$ $= 140^\circ$</p>	<p>MS–M6 Non-right-angled Trigonometry MS2–12–3, 12–4, 12–9, 12–10 Bands 3–4</p> <ul style="list-style-type: none"> Shows the correct proof.1
<p>(c)</p> <p>$d^2 = 26^2 + 16^2 - (2 \times 26 \times 16 \times \cos 140)$ $d^2 = 1569.3490$ $d = \sqrt{1569.3490}$ $= 39.6150$ $\approx 40 \text{ km}$</p>	<p>MS–M6 Non-right-angled Trigonometry MS2–12–3, 12–4, 12–9, 12–10 Band 4</p> <ul style="list-style-type: none"> Substitutes into the cosine rule AND calculates the distance2 <hr/> <ul style="list-style-type: none"> Makes significant progress1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
<p>(d) $\frac{\sin \theta}{16} = \frac{\sin 140}{40}$ $\sin \theta = \frac{16 \sin 140}{40}$ $\theta = \sin^{-1}\left(\frac{16 \sin 140}{40}\right)$ $= 14.8989$ $\approx 15^\circ$ bearing = $180 - (15 + 75)$ $= 90^\circ$</p> <p><i>Note: Consequential on answer to Question 24(c).</i></p>	<p>MS–M6 Non-right-angled Trigonometry MS2–12–3, 12–4, 12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> • Provides the correct solution3 <hr/> <ul style="list-style-type: none"> • Substitutes into the sine rule AND finds the value of θ2 <hr/> <ul style="list-style-type: none"> • Makes some progress.1
Question 25	
<p>shower water usage per year = $14 \times 8 \times 2 \times 365$ $= 81\,760$ L $= 81.76$ kL</p> <p>cost per year = 81.76×2.55 $= 208.488$ $\approx \\$208.49$</p>	<p>MS–M7 Rates and Ratios MS2–12–3, 12–4 Band 4</p> <ul style="list-style-type: none"> • Finds the shower water usage per year AND calculates the cost2 <hr/> <ul style="list-style-type: none"> • Makes some progress.1
Question 26	
<p>(a) $z = \frac{x - \mu}{\sigma}$ $1.5 = \frac{84 - 72}{s}$ $s = \frac{84 - 72}{1.5}$ $= 8$</p>	<p>MS–S5 The Normal Distribution MS2–12–2, 12–7, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> • Provides the correct solution1
<p>(b) $z = \frac{x - \mu}{\sigma}$ $1.5 = \frac{x - 78}{6}$ $x - 78 = 9$ $x = 87$</p>	<p>MS–S5 The Normal Distribution MS2–12–2, 12–7, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> • Substitutes into the formula AND determines the moderated score.2 <hr/> <ul style="list-style-type: none"> • Makes some progress.1
<p>(c) 66 has a z-score of -2. $2.5\% \times 120 = 3$ students</p>	<p>MS–S5 The Normal Distribution MS2–12–2, 12–7, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> • Finds the z-score and percentage AND calculates the number of students.2 <hr/> <ul style="list-style-type: none"> • Finds the z-score1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
<p>Question 27</p> <p>(a)</p>  <p>minimum distance = $16 + 18 + 21 + 16 + 23 + 16 + 17 + 14$ $= 141$ km</p>	<p>MS–N2 Network Concepts MS2–12–8, 12–9, 12–10 Band 5</p> <ul style="list-style-type: none"> Provides the correct solution3 Finds the minimum spanning tree AND uses some correct values2 Makes some progress towards finding the minimum spanning tree.1
<p>Question 28</p> <p>$P(2 \text{ blue socks OR } 2 \text{ white socks})$</p> $= \left(\frac{8}{15} \times \frac{7}{14} \right) + \left(\frac{7}{15} \times \frac{6}{14} \right)$ $= \frac{4}{15} + \frac{1}{5}$ $= \frac{7}{15}$	<p>MS–S2 Relative Frequency and Probability MS11–8, 11–10 Bands 4–5</p> <ul style="list-style-type: none"> Provides the correct solution3 Finds the probability of either both blue or both white socks AND attempts to find the second probability2 Makes some progress.1
<p>Question 29</p> <p>(a)</p> $A \approx \frac{h}{2}(d_f + d_l)$ $= \frac{4}{2}(5+3) + \frac{4}{2}(3+4) + \frac{4}{2}(4+6) + \frac{4}{2}(6+4)$ $= 16 + 14 + 20 + 20$ $= 70 \text{ m}^2$	<p>MS–M1 Applications of Measurement MS11–3, 11–4 Bands 4–5</p> <ul style="list-style-type: none"> Uses the trapezoidal rule AND calculates the area2 Makes some progress.1
<p>(b)</p> $V = Ah$ $= 70 \times 2$ $= 140 \text{ m}^3$ <p>$1 \text{ m}^3 = 1 \text{ kL} = 1000 \text{ L}$ capacity = 140 kL $= 140\,000 \text{ L}$</p> <p><i>Note: Consequential on answer to Question 29(a).</i></p>	<p>MS–M1 Applications of Measurement MS11–3, 11–4 Band 4</p> <ul style="list-style-type: none"> Finds the volume of the pond AND calculates the capacity in litres2 Finds the volume of the pond1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
<p>Question 30</p> <p>amount of energy per year = $3 \times 350 \times 365$ $= 383\,250$ watts $= 383.25$ kW</p> <p>cost per year = 383.25×0.45 $= 172.4625$ $\approx \\$172.46$</p>	<p>MS–M7 Rates and Ratios MS2–12–3, 12–4, 12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Finds the amount of energy per year in kilowatts AND finds the cost per year2 <hr/> <ul style="list-style-type: none"> Makes some progress towards finding the amount of energy per year1
<p>Question 31</p> <p>(a) $C =$ cost, $n =$ number of coffee tables, $I =$ income $C = 180n + 360$ $I = 200n$</p>	<p>MS–A4 Types of Relationships MS2–12–1, 12–6 Bands 4–5</p> <ul style="list-style-type: none"> Provides the TWO equations2 <hr/> <ul style="list-style-type: none"> Provides ONE equation1
<p>(b)</p>  <p>KEY ——— cost - - - - income</p> <p><i>Note: Consequential on answer to Question 31(a).</i></p>	<p>MS–A4 Types of Relationships MS2–12–1, 12–6 Bands 4–5</p> <ul style="list-style-type: none"> Graphs the TWO equations2 <hr/> <ul style="list-style-type: none"> Graphs ONE equation1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
<p>(c) The point of intersection is (18, 3600). This is the break-even point, where cost is equal to income. This is the point at which Domenica will start to make a profit. <i>Note: Consequential on answer to Question 31(b).</i></p>	<p>MS–A4 Types of Relationships MS2–12–10 Band 4</p> <ul style="list-style-type: none"> States the point of intersection AND explains the significance2 <hr/> <ul style="list-style-type: none"> States the point of intersection OR explains the significance1
<p>(d) profit = income – cost = $200n - (180n + 360)$ = $20n - 360$ $n = 30$ \therefore profit = $20(30) - 360$ = \$240 <i>Note: Consequential on answer to Question 31(a).</i></p>	<p>MS–A4 Types of Relationships MS2–12–1, 12–6 Band 4</p> <ul style="list-style-type: none"> Finds an expression for the profit AND calculates the profit2 <hr/> <ul style="list-style-type: none"> Makes some progress.1
Question 32	
<p>(a) future value = $16\,500 \times 3.18$ = \$52 470</p>	<p>MS–F5 Annuities MS2–12–5, 12–9, 12–10 Bands 3–4</p> <ul style="list-style-type: none"> Provides the correct solution1
<p>(b) future value = $13\,400 \times 4.16$ = \$55 744</p>	<p>MS–F5 Annuities MS2–12–5, 12–9, 12–10 Bands 3–4</p> <ul style="list-style-type: none"> Provides the correct solution1
<p>(c) payment per period = $\frac{55\,000}{2.08}$ = 26 442.307 \approx \$26 443 <i>Note: Do not accept the rounded-down value of \$26 442; this is not enough to reach the goal of \$55 000.</i></p>	<p>MS–F5 Annuities MS2–12–5, 12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Chooses the correct value from the table AND calculates the rounded value2 <hr/> <ul style="list-style-type: none"> Makes some progress.1
<p>(d) payment per period = $\frac{32\,475}{2.06}$ = 15 764.5631 \approx \$15 765</p>	<p>MS–F5 Annuities MS2–12–5, 12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Chooses the correct value from the table AND provides the payment per period2 <hr/> <ul style="list-style-type: none"> Makes some progress.1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
Question 33	
$3000 \times 0.0892 = \$267.60$ $x \times 0.0892 = \$150$ $x = \frac{150}{0.0892}$ $= 1681.6144$ $= 1681 \text{ MJ}$ <i>Note: Do not accept the rounded-up value of 1682 MJ; this will result in a bill greater than \$150.</i>	MS–M7 Rates and Ratios MS2–12–3, 12–4, 12–9, 12–10 Bands 4–5 <ul style="list-style-type: none"> • Finds the cost of 3000 MJ AND calculates the correct logical solution to obtain a cost less than \$1502 <hr/> <ul style="list-style-type: none"> • Attempts to find the cost of 3000 MJ.1
Question 34	
(a) $A = 55p - 425$ $= 55(100) - 425$ $= \$5075$	MS–A1 Formulae and Equations MS11–1, 11–6 Bands 3–4 <ul style="list-style-type: none"> • Provides the correct solution1
(b) $10\,000 = 55p - 425$ $55p = 10\,425$ $p = \frac{10\,425}{55}$ $= 189.5455$ $\approx 190 \text{ guests}$	MS–A1 Formulae and Equations MS11–1, 11–6 Bands 4–5 <ul style="list-style-type: none"> • Substitutes into the formula AND calculates the rounded solution2 <hr/> <ul style="list-style-type: none"> • Substitutes into the formula.1
Question 35	
(a) $\frac{70\,000}{1000} = \$70$ monthly repayment = 70×32.52 $= \$2276.40$	MS–F4 Investments and Loans MS2–12–5, 12–10 Bands 3–4 <ul style="list-style-type: none"> • Provides the correct solution1
(b) monthly repayment = 70×22.97 $= \$1607.90$ monthly saving = $2276.40 - 1607.90$ $= \$668.50$ <i>Note: Consequential on answer to Question 35(a).</i>	MS–F4 Investments and Loans MS2–12–5, 12–10 Band 4 <ul style="list-style-type: none"> • Finds the monthly repayment AND calculates the monthly saving.2 <hr/> <ul style="list-style-type: none"> • Finds the monthly repayment1
(c) (i) total amount paid = $\$2276.40 \times 12 \times 3$ $= \$81\,950.40$ interest = $81\,950 - 70\,000$ $= \$11\,950.40$ <i>Note: Consequential on answer to Question 35(a).</i>	MS–F4 Investments and Loans MS2–12–5, 12–10 Bands 4–5 <ul style="list-style-type: none"> • Finds the total amount paid AND calculates the interest paid.2 <hr/> <ul style="list-style-type: none"> • Finds the total amount paid1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
<p>(ii) $I = Prn$ $11\,950.40 = 70\,000 \times r \times 3$ $r = \frac{11\,950.40}{210\,000} \times 100\%$ $= 5.6907$ $\approx 5.7\%$ per annum</p> <p><i>Note: Consequential on answer to Question 35(c)(i).</i></p>	<p>MS–F4 Investments and Loans MS2–12–5, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Substitutes into the simple interest formula AND calculates the annual interest rate.2 <hr/> <ul style="list-style-type: none"> Makes some progress.1
Question 36	
<p>(a) Pearson correlation coefficient = 0.9786 ≈ 0.98</p> <p><i>Note: The method for finding the answer may differ based on the calculator used. For CASIO, the data is entered into the calculator in STAT mode and paired data, $A + BX$, along with its frequency. The coefficient is found using the regression analysis options in the STAT menu.</i></p>	<p>MS–S4 Bivariate Data Analysis MS2–12–2, 12–7, 12–9 Bands 4–5</p> <ul style="list-style-type: none"> Finds the Pearson correlation coefficient1
<p>(b) The linear relationship has a strong positive linear correlation.</p>	<p>MS–S4 Bivariate Data Analysis MS2–12–2, 12–7, 12–9 Bands 4–5</p> <ul style="list-style-type: none"> States the strength AND direction of correlation2 <hr/> <ul style="list-style-type: none"> States the strength OR direction of correlation1
<p>(c) $0.3 = 0.072 + 0.088 \times \text{length}$ $0.228 = 0.088 \times \text{length}$ $\text{length} = \frac{0.228}{0.088}$ $= 2.5909$ ≈ 2.6 cm</p>	<p>MS–S4 Bivariate Data Analysis MS2–12–2, 12–7, 12–9 Bands 4–5</p> <ul style="list-style-type: none"> Substitutes into the equation AND calculates the length.2 <hr/> <ul style="list-style-type: none"> Makes some progress.1
Question 37	
<p>(a) daily interest rate = $\frac{14.8}{365}$ $\approx 0.0405\%$</p>	<p>MS–F4 Investments and Loans MS2–12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Provides the correct solution1

Sample answer	Syllabus content, outcomes, targeted performance bands and marking guide
<p>(b) clothing store = $20 + 5 = 25$ days shoe store = $13 + 5 = 18$ days supermarket = $11 + 5 = 16$ days Using the compound interest formula, $A = P(1 + R)^n$: total paid = $84(1.000405)^{25} + 150(1.000405)^{18}$ $+ 170(1.000405)^{16}$ $= 407.0569$ $\approx \\$407.06$</p>	<p>MS–F4 Investments and Loans MS2–12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Substitutes into the compound interest formula with the correct number of days AND provides the correct solution2 <hr/> <ul style="list-style-type: none"> Makes some progress.1
Question 38	
<p>(a) There are eight different paths: <i>ABG, ACBG, ACEFG, CBG, CEFG, DFG, DCBG, DCEFG</i>.</p>	<p>MS–N3 Critical Path Analysis MS2–12–8, 12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> States the number of paths AND lists the paths2 <hr/> <ul style="list-style-type: none"> Lists some pathways1
<p>(b)</p> <p>maximum flow = $4 + 4 + 3$ $= 11$ kL</p>	<p>MS–N3 Critical Path Analysis MS2–12–8, 12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Finds the correct flow in the pipes AND calculates the maximum flow.....2 <hr/> <ul style="list-style-type: none"> Makes some progress.1
<p>(c)</p> <p>Note: The minimum cut is indicated by the dashed line.</p>	<p>MS–N3 Critical Path Analysis MS2–12–8, 12–9, 12–10 Bands 4–5</p> <ul style="list-style-type: none"> Draws the minimum cut1