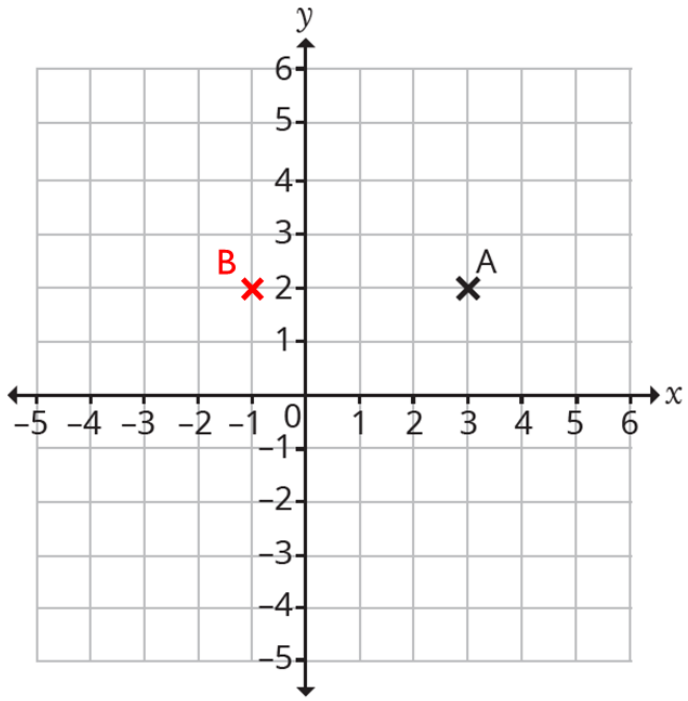
Year 11 Practice Paper 2H Calculator Mark Scheme

Question	Answer	Marks	Notes and guidance
1	$3.158\dot{3}$	2	Award 1 mark for $\frac{7.58}{2.4}$ or $\frac{379}{120}$ seen or implied Accept 3.158333(3…)
2a	$3(2a + 1)$	1	
2b	$8p - 9$	2	Award 1 mark for two correct expansions $6p - 15 + 2p + 6$ or one term correct
3a	$(3, 2)$	1	
3b		1	Accept any clear indication

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3c	$p = 1$	1	Accept 1
4a	y^6	1	
4b	$8z^{15}$	2	Award 1 mark for either a correct coefficient or power of z
5	\$51.20 or £37.65	2	Award 1 mark for a correct method to convert dollar to pounds, or pounds to dollars, seen or implied e.g. 920×1.36 $(= 1251.20)$ or $1200 \div 1.36$ $(= 882.35)$
6	£2152.96	3	Award 1 mark for a correct full method to reduce 2500 by 7.2% once seen or implied e.g. 2500×0.928 $(= 2320)$ Award 2nd mark for a full correct method to find the price of the computer after 2 years seen or implied e.g. 2500×0.928^2 Condone missing £
7	216 cm^2	3	Award 1 mark for a correct method to find either side of a smaller rectangle e.g. $3x = 18$ seen or implied. Award 2nd mark for an attempt to find the area of any relevant rectangle Condone missing units cm^2

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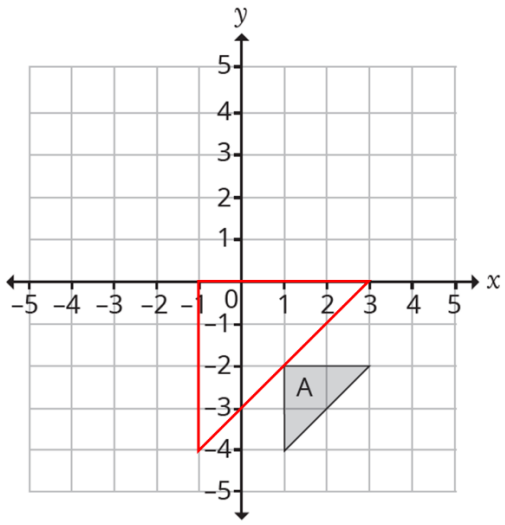
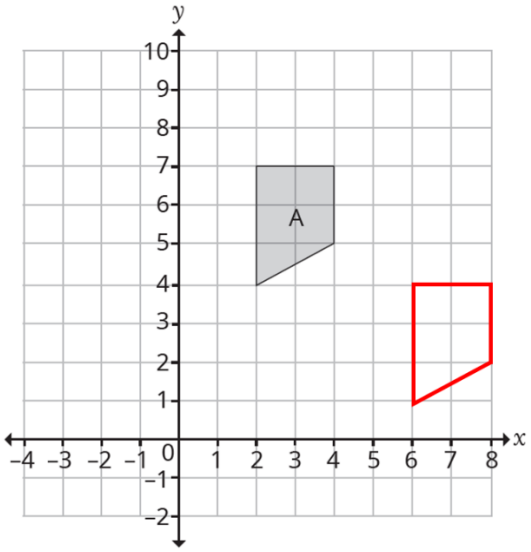
8a		3	Award 1 mark for one side of the enlarged triangle correctly placed OR an enlargement from centre (3, −4) with scale factor ≠ 2 placed correctly. Award 2 marks for an enlargement with scale factor 2 positioned incorrectly.
8b		2	Award 1 mark for either a correct horizontal or vertical translation of the trapezium.

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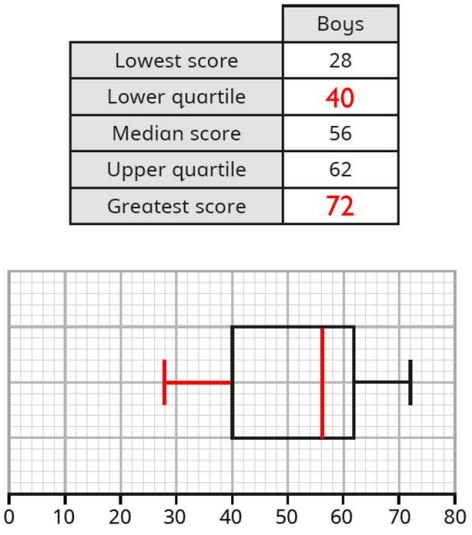
9	75	3	Award 1 mark for $175 \div (5 + 2)$ Award 1 mark for $3 \times$ "$175 \div (5 + 2)$"
10	$294 \text{ cm} \leq l < 295 \text{ cm}$	2	Award 1 mark for either end of the inequality correct OR both ends correct for rounding rather than truncation i.e. $293.5 \leq l < 294.5$ seen
11	614.3 cm^3	3	Award 1 mark for a correct method to find the area of the cross-section of the solid seen or implied e.g. $(3.8 \times 11.2) + (5.1 \times 3.7)$ or 61.43 Award 1 mark for a correct method to find the volume i.e. "61.43" $\times$ 10 Condone missing units
12a		3	Award 1 mark for correct plotting either the median or the lowest score. Award 1 mark for either LQ = 40 or greatest score = 72 seen or clearly indicated

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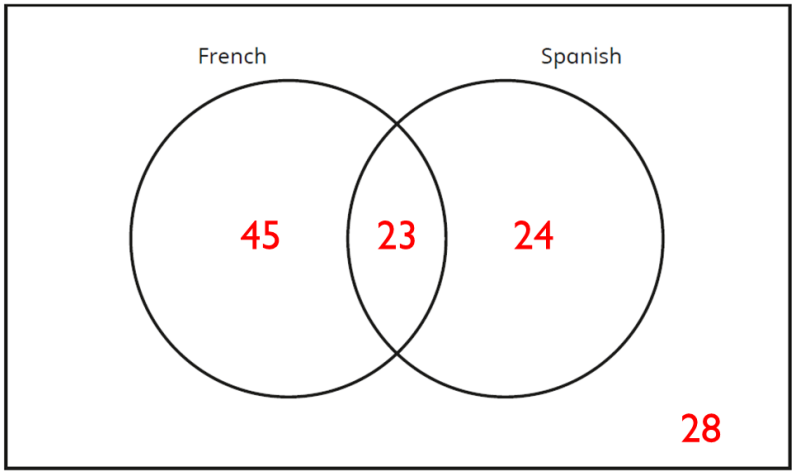
12b	e.g. "The girls had a greater median test score than the boys" "The boys and girls test scores had the same inter-quartile range."	2	Award 1 mark for a correct comparison of the median test scores Award 1 mark for a correct comparison of the inter-quartile range of the scores
13a		3	Award 1 mark for 23 and 28 placed correctly Award 1 mark for either 45 or 24 found and placed correctly
13b	$\frac{23}{68}$	2	Award 1 mark for $\frac{23}{k}$ where k is their 68 from part a

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14	Yes, with supporting working	3	Award 1 mark for a correct method to find the area of a square tile seen or implied e.g. 0.5×0.5 $(= 0.25)$ Award 1 mark for a correct method to find the total area of 20 square tiles Award 3rd mark must have conclusion and compare areas in the same units. Accept alternative methods e.g. $\sqrt{4.5 \div 20}$ to compare the side length of square tiles
15	400 N/m^2	2	Award 1 mark for a correct method seen or implied i.e. $5000 \div 12.5$ Condone missing units
16	$y = -2x + 20$	4	Award 1 mark for a correct method to find the gradient of the line segment AB e.g. $\frac{-13--5}{7-3}$ $(= -2)$ Award 1 mark forming the equation of the parallel line with their gradient of AB seen or implied e.g. $y = -2x + c$ Award 1 mark for correct use of (5, 10) substituted into their equation to find c Accept any equivalent form

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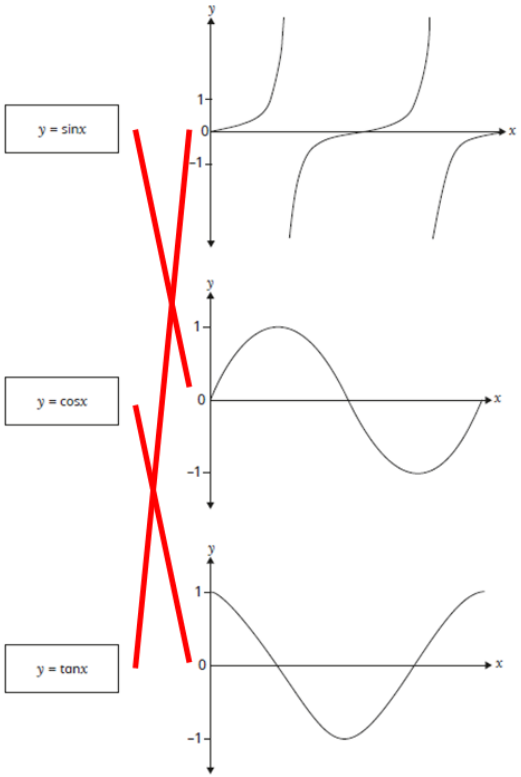
17		2	Award 1 mark one correct match
18	324.40 mm	3	Award 1 mark for a correct method using the sine rule seen or implied e.g. $\frac{AC}{\sin(96)} = \frac{168}{\sin(31)}$ or $\frac{AB}{\sin(53)} = \frac{168}{\sin(31)}$ Award 1 mark for a correct method to evaluate AC e.g. $\frac{168 \times \sin(96)}{\sin(31)}$ Condone missing units

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19	e.g. 416 or 417 or 420	3	Award 1 mark for an attempt to compare proportions e.g. $\frac{50}{N} = \frac{12}{100}$ or equivalent Award 1 mark for a correct method seen to evaluate the population of rabbits e.g. $\frac{50\times100}{12}$ Award final mark for a suitable integer estimate. Do not accept $416.\dot{6}$ or equivalent
20	$x < -10$ or $x > 1$	3	Award 1 mark for a correct method to solve the quadratic e.g. $(x + 10)(x - 1) > 0$ Condone use of $=$ or missing > 0 Award 2nd mark for critical values found as -10 and 1 Do not accept $-10 > x > 1$
21a	-155	3	Award 1 mark for a correct method to evaluate $g(6)$ seen or implied e.g. $g(6) = 2 - 7(6)$ $(= -40)$ Award 1 mark for a correct method to find $f("g(6)")$ e.g. $4(-40) + 5$
21b	$f^{-1}(x) = \frac{x-5}{4}$	2	Award 1 mark for a correct method to find inverse function e.g. $x = 4y - 5$
22a	$3x - 13 + 4x - 10 = 180$ $7x - 23 = 180$ Opposite angles in a cyclic quadrilateral sum to 180°	2	Award 1 mark for forming a correct equation involving ∠BAD and ∠BCD Award 1 mark for a correct reason given. Explanation must include words underlined or their equivalent.

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22b	$x = 29°$ $\angle ADC = 98°$ The angle at the centre is twice the angle at the circumference Reflex $\angle AOB = 196°$ Obtuse $\angle AOB = 164°$	4	Award 1 mark for x correctly evaluated. Award 1 mark for evaluating $\angle ADC$ Award 1 mark for evaluating obtuse $\angle AOB$ Award 1 mark for correct reasoning Explanation must include words underlined or their equivalent. Award full marks correct solution with complete workings with supporting reasoning
23a	$(-4, 4)$	1	
23b	$(-4, -3)$	1	
23c	$(-5, 2)$	1	
24	$c = \frac{3}{4}$	5	Award 1 mark for correct method to find at least one equation e.g. $a = kb^2$ or $c = \frac{k'}{\sqrt{a}}$ with values substituted. Award 1 mark for each correct equations with constants evaluated i.e. $a = 4b^2$ and $c = \frac{18}{\sqrt{a}}$ Award 4th mark for a correct method to evaluate c using their equation in b and c Award final mark for correct value of c. Accept any equivalent form