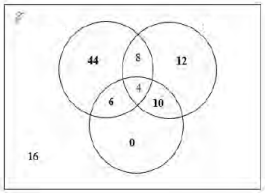
1	6.495190528	B1 M1 M1 A1	for 11.25 or 11.35 use $a^2 + a^2 + a^2$ oe for the square of the length of a diagonal for writing an equation to find the length of a side, eg $a^2 + a^2 + a^2 = [LB]^2$ where $11.25 \leq LB < 11.3$ oe for an answer in the range 6.49 to 6.50	 If the answer is given in the range 6.49 to 6.5 without supportive evidence award 0 marks.

2	89.5 and 90.5	B1 B1	for 89.5 in the correct position for 90.5 in the correct position	 Accept $90.4\dot{9}$ or 90.499(…)

3 (a)	Venn diagram	C4 (C3 (C2 (C1	fully correct Venn diagram 6 or 7 of the 8 regions correct) 4 or 5 of the 8 regions correct) 2 or 3 of the 8 regions correct)	 If all other regions correct, accept blank region for 0 Additional digits in the diagram should be counted as 2 elements
(b)	$\frac{12}{62}$	M1 A1	(ft their Venn diagram) for $\frac{"8+4"}{b}$ where $b >$ "8 + 4" or $\frac{a}{"44+8+4+6"}$ where $a <$ "44 + 8 + 4 + 6" oe ft oe	Need not be written in correct form at this stage eg could be a ratio 12 : 62 Accept any equivalent fraction, decimal form 0.19(35...) or percentage form 19(.35…)%

4	20	B1	stating bound, eg 10.65 **or** 10.55 **or** 31 min 48.5sec **or** 31 min 47.5sec **or** 1908.5sec **or** 1907.5sec	
		P1	(dep on B1) for a correct bound for time in hours, eg 0.5301(38…) **or** 0.5298(61…) **Or** a correct process to find one bound for speed in km per minute eg [UB of S] = [UB of D]÷[LB of T] or [LB of S] = [LB of D]÷[UB of T] **or** a correct process to find one bound for speed in km per second eg [UB of S] = [UB of D]÷[LB of T] or [LB of S] = [LB of D]÷[UB of T]	Bound rounded or truncated to 4 dp Where 10.6 < [UB of D] ≤ 10.65 **and** 31 min 47.5 sec ≤ [LB of T] < 31 min 48 sec **Or** 10.55 ≤ [LB of D] < 10.6 **and** 31 min 48 sec < [UB of T] ≤ 31 min 48.5 sec Where 10.6 < [UB of D] ≤ 10.65 **and** 1907.5 sec ≤ [LB of T] < 1908 sec **Or** 10.55 ≤ [LB of D] < 10.6 **and** 1908 sec < [UB of T] ≤ 1908.5 sec
		P1	(dep on P1) for correct process to find one bound for speed in km per hour, eg [UB of S] = [UB of D]÷ 0.5298(61…) **or** [LB of S] = [LB of D]÷ 0.5301(38…) **OR** Correct process to convert a bound for speed in km per minute to km per hour eg [UB of S] = [UB of D]÷[LB of T] × 60 **or** [LB of S] = [LB of D]÷[UB of T] × 60 **OR** Correct process to convert a bound for speed in km per second to km per hour eg [UB of S] = [UB of D]÷[LB of T] × 60 × 60 **or** [LB of S] = [LB of D]÷[UB of T] × 60 × 60	Time used in hours Where 10.6 < [UB of D] ≤ 10.65 **and** 31 min 47.5 sec ≤ [LB of T] < 31 min 48 sec **Or** 10.55 ≤ [LB of D] < 10.6 **and** 31 min 48 sec < [UB of T] ≤ 31 min 48.5 sec Where 10.6 < [UB of D] ≤ 10.65 **and** 1907.5 sec ≤ [LB of T] < 1908 sec **Or** 10.55 ≤ [LB of D] < 10.6 **and** 1908 sec < [UB of T] ≤ 1908.5 sec
		A1	for both correct bounds from correct working, 20.099… **and** 19.900…	Figures rounded or truncated to 3 sf or better
		C1	for 20 correct to 2 significant figures as both bounds agree.	

5	1.2, 1.3	B1	for 1.2 in the correct position	
		B1	for 1.3 in the correct position	Accept $1.2\dot{9}$ or 1.299… must be 9 recurring.

6	12.65, 12.75	B1	for 12.65 in correct position	
		B1	for 12.75 in correct position	Accept $12.74\dot{9}$ or 12.7499(…)

7	46.989...	B1	for stating at least one bound, 9.25 or 9.35 or 12.55 or 12.65	Accept $9.34\dot{9}$ or 9.3499(…) or $12.64\dot{9}$ or 12.6499(…)
		P1	for correct use of LB and UB, eg $\sin x = \frac{[\text{LB of } AB]}{[\text{UB of } AC]}$	$9.25 \le \text{LB} < 9.3$ $12.6 < \text{UB} \le 12.65$ $\sin(x) = 0.731(\ldots)$
		A1	for answer in the range 46.98 to 47 from correct working	Answer only award no marks.