This test is divided into non-calculator (20 minutes) and calculator (30 minutes) sections which can be delivered separately.

The following marks are awarded for each question.

B	Unconditional accuracy mark
M	Method mark – the correct method must be shown but there may be an arithmetic error; the sight of the value given in brackets implies the award of the method mark
A	Accuracy mark – unless the question specifies that working **must** be shown then the sight of the correct answer implies the award of full marks (unless the answer clearly comes from incorrect working)
C	Communication mark
P	Process mark to show correct process for problem solving. Any other process of a similar standard to achieve an accurate result is acceptable to achieve this mark
FT	Incorrect values may be **followed through** from one step to the next **provided** that the correct method is seen in each step and the only errors are arithmetic. This is shown in mark schemes by putting a number in inverted commas
OE	Or equivalent answer mark

Non-Calculator			
Q	**Answer**	**Mark**	**Comment**
1	$a = 62°$ with all correct reasons	M1	for correct method to get a e.g. angle $PQY = 180° – 118°$ (= 62°), angle QPY = "62", a = "angle QPY" (you may see these values on the diagram)
		C2	(dep on M1) all figures correct with all three appropriate reasons; C1(dep on M1) for one reason clearly used and stated angles on a straight line add up to 180° base angles of an isosceles triangle are equal; alternate angles are equal

3	Fully correct workings	M1	for a complete method to find the interior or exterior angle of the 15 sided polygon, e.g. $180-\frac{360}{15}$, $\frac{180}{15}(15-2)$ OE (= 156), 360 ÷ 15 (= 24)
		M1	for a complete method to find the interior angle of polygon **A**, e.g. at *X* or *Y*: 360 − "156" − 60 or "24" + 120 (= 144) Or for a complete method to find interior or exterior angle of the decagon e.g. $180-\frac{360}{10}$, $\frac{180}{10}(10-2)$ OE (= 144), 360 ÷ 10 (= 36)
		A1	for 24 and 144 or 24 and 36 or 144 and 156 or 36 and 156
		C1	complete solution, fully supported by accurate figures

5	48	P1	for starting process of Pythagoras, e.g. $6^2 + 8^2$ or for any evidence of working with Pythagoras
		P1	complete process for Pythagoras, e.g. $\sqrt{6^2+8^2}$ or $\sqrt{36+64}$ or $\sqrt{100}$ (= 10)
		P1	Process of adding all the lengths e.g. 6 + 6 + 8 + 8 + "10" + "10" (= 48)
		A1	48

Calculator			
7a	18°	B1	
7b	20	M1	360 ÷ "18"
		A1	20
9	12.4 (km)	M1	$8^2 + 9.5^2$ (= 154.25)
		M1	$\sqrt{154.25}$ or $\sqrt{(8^2 + 9.5^2)}$
		A1	allow answers in the range 12.4–12.42
11	37.4°	M1	$\cos x = \frac{5.8}{7.3}$
		M1	$x = \cos^{-1} \frac{5.8}{7.3}$
		A1	x = 37.4° (1 d.p.)

13	8.13 (cm)	M1	for $\tan 38 = \frac{YZ}{10.4}$ OE
		A1	allow answers in the range of 8.1–8.13
15	11.8 (m)	M1	for $\cos 65 = \frac{5}{AC}$ OE
		A1	allow answers in the range 11.8–11.9

Non-Calculator			
Question	**Topic**	**Step**	**Mark**
1	Using angles on parallel lines and angles in an isosceles triangle	6th	3
3	Interior angles in regular polygons	7th	4
5	Using Pythagoras' theorem	8th	4

Calculator			
7	Exterior angles of polygons	6th	3
9	Using Pythagoras' theorem	8th	3
11	Finding an angle using trigonometry	8th	3
13	Finding a side using trigonometry	8th	2
15	Finding a side using trigonometry	9th	2