Question	Answer	Marks
1	MP1. possible perimeter / eq; MP2. but not area / eq;	2
2	MP1. logical working; MP2. filled in bar at 2;	2
3	MP1. if A and B are 180 / eq; MP2. otherwise incorrect / eq;	2
4	Example: MP1. perimeter = 36; MP2. 2x + 2x + x + x = 36; MP3. 2(6) x 6 = 72cm2; Award full marks for logical working and correct answer: 72cm2;	3
5(a)	Example: MP1. 2x + 1.6 = 10; MP2. 2/3 * 4.2 = 2.8; Award full marks for logical working and correct answer: £2.80;	2
5(b)	MP1. 2.8 + x + 1.6 = 8.6;	1
6(a)	Example: MP1. 12 * 40.5π = 486π; MP2. 10 * 15 * 3 = 450; MP3. 486π/450 = 3.39; MP4. 4; Award full marks for logical working and correct answer: 4;	4
6(b)	Example: MP1. 4 - 486π/450 = 0.607; MP2. 0.607 * 10.99 = 6.67; Award full marks for logical working and correct answer: 6.67;	2
7	Example: MP1. 90 - 48.1896851 = 41.8103149°; MP2. 900π * 41.82/360 = 328.3774453; MP3. 30 * 20 = 600; MP4. 271.6225547/600 * 100 = 45.27042578%; Award full marks for logical working and correct answer: 45.27042578%;	4
8	MP1. x = 12;	3

	MP2. any indication of Pythagorean theorem; MP3. worded explanation;	
9	Example: MP1. 5t + 4t = 167; 37.5 * 0.9 = 33.75; t + r = 33.75; MP2. any indication of simultaneous equations; MP3. t = 32; Award full marks for logical working and correct answer: £32;	3
10	Example: MP1. 120 exam papers; MP2. 7 * 2 = 14 for day 1,2; MP3. 5 * 3 = 15 for day 3,4,5; MP4. 120 - 29 = 91; MP5. 9.1 = 10 days with all working printers; MP6. 10 + 5 = 15; Award full marks for logical working and correct answer: 15;	6
11	Example: MP1. 5/2.5=2 hours for swim; 40/25 = 1.6 hours for cycle; MP2. 4 mins = 0.06… hours; MP3. 2 + 1.6 + 2(0.06…) = 3.73…; 5 - 3.73… = 1.26…; MP4. 7.89km/h MP5. 2.19m/s Award full marks for logical working and correct answer: 2.19m/s;	5
12(a)	Example: MP1. Any suitable diagram;	10

	MP2. Area of sector = (1/6) * pi * r^2; MP3. Use of Pythagorean theorem to find h; MP4. h = sqrt((3r^2)/4); MP5. h = (r * sqrt(3))/2; MP6. Area of triangle = (hr)/2; MP7. Any use of the simplest equation for the chord; MP8. Any use of the simplest equation for the main part; MP9. Indication of simplifying a working equation; MP10. Any 5 of the possible answers: • (-1/3 * pi * r^2) + (r^2 * sqrt(3)); • (r^2 * sqrt(3)) - ((pi * r^2)/3); • r^2((-1/3 * pi) + sqrt(3)); • r^2(sqrt(3)-pi/3); • r^2(0.68485325637); Award full marks for logical working and a working simplified function;	
12(b)	MP1. Substituting in their function; MP2. 61.42cm^2;	2
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