

Practice Tests Set 7B – Paper 1H mark scheme – Spring 2018

Qn	Working	Answer	Mark	Notes
1	(a)(i)	$7^8$	1	B1
	(ii)	$4^{14}$	1	B1
	(b)	$7$	2	M1 or a correct equation in $n$ , e.g. $n + 3 = 10$ or $n + 3 - 6 = 4$ A1 cao
	$5^n \times 5^3 = 5^{10}$ or $\frac{5^n}{5^6} = 5$ or $\frac{5^n}{5^3} = 5^4$ or $5^{n+3} = 5^{4+6}$			
2	$525 \div 3$	$875$	2	M1 A1 cao
3	(i)	$3x + 7$	2	M1 for $x + x + 3 + x + 4$ A1 cao
	(ii)	$21$	3	M1 for $3x = 54$ M1 for $x = 18$ A1 cao
4	$240$ OR $6 \times 40$ OR $48$ (can be implied) $3x + 102 + 60 + 30 = 240$ OR $\frac{192 + 60 + 30 + 3x}{6} = 40$	$16$	3	M1 A1 B1

Qn	Working	Answer	Mark	Notes
5	$\frac{(5-2) \times 180}{5}$ <b>OR</b> $180 - \frac{360}{5}$	108°	2	M1 A1
	Either $\angle EDF = 38^\circ$ or $\angle DEF = 23^\circ$ <i>Note: Angle(s) may be marked on the diagram</i> <b><math>\angle EDF = 38^\circ</math> and</b> $\angle DEF = 23^\circ$ obtuse $\angle DFE$ $= 180 - "38" - "23"$ reflex $\angle DFE = 360 - "119"$ reflex $\angle DFE = 241$	241°	4	M1 A1 M1 A1
6	1% of 7500 = 75 1% of 7575 = 75.75 Total = 75.75 + 75 = 150.75	150.75	3	M2 for $1.01^2 \times 7500$  A1 cao

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7	(a) (20, 4) (40, 16) (60, 42) (80, 84) (100, 96) (120, 100)	correct cf graph	2	M1 (ft from sensible table i.e. clear attempt at addition) for at least 4 points plotted correctly at end of interval <b>or</b> for all 6 points plotted consistently within each interval in the <b>freq table</b> at the correct height A1 accept curve or line segments accept curve that is not joined to (0,0)
	(b) Reading from graph at $t = 70$		2	M1 for evidence of using graph at $t = 70$ ft from a cumulative frequency graph provided method is shown A1 100 – ‘63’ ft from a cf graph ft from a cumulative frequency graph provided method is shown
8	$\sqrt{(8 \times 6)} + \sqrt{(18 \times 6)}$ $(2\sqrt{2} \times \sqrt{6}) + (3\sqrt{2} \times \sqrt{6})$	$\frac{10}{\sqrt{2}}$	3	M1 $\sqrt{(16 \times 3)} + \sqrt{(36 \times 3)} (= 10\sqrt{3})$ M1 $10\sqrt{3} \times \frac{\sqrt{2}}{\sqrt{2}}$ or $\frac{10\sqrt{3}}{\sqrt{6}}$ A1 (dep on at least one M1)

Qn	Working	Answer	Mark	Notes
9	$2x - 4 = x^2 - 4x + 4$ $x^2 - 6x + 8 = 0$ $(x - 4)(x - 2) = 0$ $x = 4, x = 2$ When $x = 4, y = 4$ When $x = 2, y = 0$ $4 - 2 = 2$ $4 - 0 = 4$ $2^2 + 4^2$	$\sqrt{20}$	6	P1 for a process to eliminate $y$ , e.g. $2x - 4 = x^2 - 4x + 4$ followed by reduction to 3 term quadratic P1 for factorisation or formula for a 3 term quadratic = 0 P1 for a process to find the values of $y$ A1 all 4 values ( $x = 4, y = 4$ , and $x = 2, y = 0$ ) P1 for a correct process to find the distance <sup>2</sup> or distance between the 2 points, e.g. $(4 - 2)^2 + (4 - 0)^2$ A1 $\sqrt{20}$
10		$35^\circ$	4	M1 for $ABC = 90$ M1 for $(ACB =) 180 - 90 - 25 (= 65)$ M1 for $(DBC =) 180 - '65' - 80 (=35)$ A1 cao supported by working <b>OR</b> M1 for $(AOB =) 180 - 2 \times 25 (= 130)$ M1 for $(ADB =) 130 \div 2 (=65)$ M1 for $(DAC =) 180 - 65 - 80$ A1 cao supported by working.

### Suggested grade boundaries

	9	8	7	6	5	4
<b>Paper 1H</b>	<b>34</b>	<b>30</b>	<b>26</b>	<b>22</b>	<b>18</b>	<b>13</b>
<b>Paper 2H</b>	<b>36</b>	<b>31</b>	<b>26</b>	<b>21</b>	<b>16</b>	<b>11</b>
<b>Paper 3H</b>	<b>29</b>	<b>25</b>	<b>21</b>	<b>17</b>	<b>13</b>	<b>9</b>
<b>Total</b>	<b>99</b>	<b>86</b>	<b>73</b>	<b>60</b>	<b>47</b>	<b>33</b>