Qn		Working	Answer	Marks	Notes
1	(a)	<table><tr><th></th><th>orange</th><th>blue</th><th>yellow</th><th>total</th></tr><tr><th>small</th><td>***6***</td><td>7</td><td>14</td><td>***27***</td></tr><tr><th>large</th><td>13</td><td>***16***</td><td>***4***</td><td>33</td></tr><tr><th>total</th><td>***19***</td><td>23</td><td>***18***</td><td>60</td></tr></table>		3	B3 All 6 entries correct B2 for 4 or 5 correct entries B1 for 2 or 3 correct entries
	(b)		$\frac{23}{60}$	1	B1 Allow 0.38(333...) or 38(.33...)%
	(c)		$\frac{13}{33}$	2	B2 $\frac{n}{33}$ B1 for $\frac{n}{33}$ where n < 33 or $\frac{13}{m}$ where m > 13
					Total 6 marks

2	a		24.9	1	B1
	b		7.1	1	B1 oe
	c	7 ÷ 8 × 100 oe			M1
			87.5	2	A1
					Total 4 marks

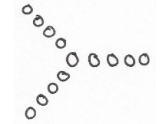
3	eg 1 × 6 + 2 × 3.50 + 4 × 4.20 (= 29.8(0)) 40 – 1 × 6 – 2 × 3.50 (= 27.(00))			M1	for working with at least three of hammer, nails, wood, money, gloves
	40 – (1 × 6 + 2 × 3.50 + 4 × 4.20) (= 10.2(0))			M1	complete method to find the remaining money
	"10.20" ÷ 1.80 (= 5.66...) **or** [their remaining money] ÷ 1.80 **or** 1.80 × 5 (= 9) **or** 1.80 × 6 (= 10.8(0))			M1	(dep on M1) method to find the number of pairs of gloves
		5	4	A1	SC B2 for an answer of 14
					Total 4 marks

4	10 × 5 + 30 × 11 + 50 × 8 + 70 × 19 + 90 × 9 (50 + 330 + 400 + 1330 + 810)		3	M2	Correct products using midpoints (allowing one error) with intention to add. M1 for products using frequency and a consistent value within the range (allowing one error) with intention to add. or correct products using midpoint without intention to add.
		2920		A1	N.B. 2920 ÷ 52(=56.15...) gains M2 only
					Total 3 marks

5	(a)		156 000 000	1	B1	
	(b)		Arctic	1	B1	
	(c)		3.74×10^7	2	B2	B1 for 37 400 000 (oe but not in standard form)
						Total 4 marks

6		9 hours 45 mins	2	B2 B1 for 9 hours or 45 minutes
				Total 2 marks

7	$8.5^2 + 5.6^2$ (=103.61)		3	M1
	$\sqrt{8.5^2 + 5.6^2}$			M1
		10.2		A1 awrt 10.2
				Total 3 marks

8	(a)			1	B1 Correct diagram
	(b)		13, 16	1	B1 Both values correct
	(c)		22	1	B1
	(d)		$C = 3P - 2$ oe	2	B2 B1 for $3P$ or $3P$ + constant (constant $\neq -2$)
	(e)		(Yes) pattern 28 has 136 triangles	1	B1 or $5 \times 28 - 4 = 136$ oe Sight of 28 is sufficient
					Total 6 marks

9	$n - 3 = 13$ oe or $n = 16$ or $(6 + m) \div 2 = 8.5$ oe or $m = 11$		2	M1
		$n = 16$ & $m = 11$		A1 Both values correct
				Total 2 marks

10	(*BC* =) 96 – 30 (=66)		3	M1
	96 + (66 ÷ 3) oe			M1
		118		A1
				Total 3 marks

11	28 ÷ 4 (= 7)			M1	
				M1	for using at least six lengths correctly (may be seen on diagram or in calculation)
	e.g. “7” + “3” + 4 + “3” + “7” + 4 + “7” + 4 + “7” + 4			M1	for a complete method to find perimeter
		50	4	A1	
				SC	Award B2 for an answer of 66 or 68
					Total 4 marks

12	4*x* or *x* − 7		4	M1	Correct expression for *B* or *C*
	x + 4*x* + *x* – 7 = 137 oe			M1	Correct equation
	x = 144 ÷ 6 (=24) or 6*x* = 144			M1	Gathering up the *x*’s and numbers Dep on previous M1
		17		A1	
					Total 4 marks

13 (a)	$\frac{40}{750}$ oe		2	M1	Numerator and denominator must be integers.
		$\frac{4}{75}$		A1	
(b)	$\frac{40}{100} \times 6.8$ oe		2	M1	
		2.72		A1	
(c)	$\frac{3}{40} \times 100$ oe		2	M1	
		7.5		A1	
					Total 6 marks

14	$\angle ABC = 360^\circ - 298^\circ (= 62^\circ)$ or $\angle BCA = 97^\circ$		4	M1	Could be marked on diagram
		21		A1	
	vertically opposite, (are equal) angles at (around) a point, (= 360°) angles in a triangle (= 180°)			B2	B2 for 3 correct reasons which must include the underlined words B1 for 1 or 2 correct reasons which must include the underlined words Any B marks dep on M1
					Total 4 marks

15	3 hours 36 mins = 216 mins or 3.6 hours		3	M1	
	2470 ÷ 3.6 or 2470 ÷ 216 × 60 oe			M1	Allow 2470 ÷ 3.36 (=735 or better)
		686		A1	
					Total 3 marks

16	20 000 × 0.813			M2	M1 for 20 000 × 0.81 (= 16 200) or 20 000 × 1.19 (= 23 800) or 20 000 × 1.193 (= 33 703.18))
		10 629		A1	Accept 10 628 → 10.629
					Total 3 marks

17	a		050	1	B1	±2°, condone 50
	b	7 × 2.5			M1	allow 6.8 – 7.2 for 7
			17.5	2	A1	accept 17-18
	c				M1	for a bearing of 115±2° from *A*
					M1	for 20 ÷ 2.5 (= 8) **or** for an arc drawn 8 cm from *B* within tolerance
			C marked within tolerance	3	A1	
						Total 6 marks

18	$1.5 \times 2 \times 8$ (= 24 (cm^3))			M1	for finding the volume of the cuboid
	e.g. ($V =$) $\frac{5.73 \times 1000}{19.32}$ (= 296.58...) **or** ($M =$) $19.32 \times$ "24" (= 463.68)			M2	complete method to find the volume of statue **or** the mass of one block, could work in g or kg (if not M2 then award M1 for correct use of density formula e.g. $19.32 = \frac{5.73 \times 1000}{V}$ **or** $19.32 = \frac{M}{"24"}$)
	e.g. "296.58" ÷ "24" (= 12.3576...) **or** "5730" ÷ "463.68" (= 12.3576...)			M1	could work in g or kg
		13	5	A1	cao
					Total 5 marks

19	a		4.35	1	B1	accept $4.34\dot{9}$
	b		4.25	1	B1	cao
						Total 2 marks

20	28×5 (= 140) **OR** 26.5×2 (= 53)			M1	or 87
	$(28 \times 5 - 26.5 \times 2) \div (5 - 2)$			M1	for a complete method
		29	3	A1	
					Total 3 marks

21	$20.40 \div (1 - 0.15)$			M2	for a complete method eg $20.40 \div (1 - 0.15)$
				(M1)	for $20.40 \div (100 - 15)$ (= 0.24) **or** e.g. $0.85x = 20.40$
		24	3	A1	
					Total 3 marks

Qn	Paper	Question	Skill tested	Max score	Mean %	ALL	5	4	3	2	1
1	**2FR**	Q08	Probability	6	89	5.36	5.76	5.66	5.30	4.89	3.34
2	**1FR**	Q09	Fractions	4	84	3.35	3.85	3.52	3.27	3.07	2.26
3	**1FR**	Q04	Applying number	4	78	3.10	3.63	3.35	2.83	2.77	1.75
4	**2FR**	Q16	Statistical measures	3	66	1.97	2.57	2.38	1.74	1.11	0.00
5	**2FR**	Q24	Standard form	4	70	2.80	3.44	3.15	2.58	1.81	1.34
6	**2FR**	Q06	Measures	2	63	1.26	1.54	1.43	1.08	0.96	0.67
7	**2FR**	Q19	Trigonometry and Pythagoras' Theorem	3	54	1.63	2.80	2.13	1.04	0.26	0.00
8	**2FR**	Q09	Expressions and formulae	6	64	3.84	4.79	3.84	3.48	3.21	3.00
9	**2FR**	Q10	Statistical measures	2	54	1.08	1.72	1.28	0.79	0.52	0.00
10	**2FR**	Q05	Applying number	3	49	1.48	2.39	1.79	1.06	0.52	0.50
11	**1FR**	Q08	Mensuration of 2D shapes	4	48	1.93	3.22	2.20	1.49	0.69	1.00
12	**2FR**	Q17	Linear equations	4	51	2.02	3.54	2.17	1.32	0.93	0.00
13	**2FR**	Q14	Percentages	6	51	3.04	4.87	3.25	2.43	1.45	0.33
14	**2FR**	Q15	Angles, lines and triangles	4	48	1.92	2.93	2.13	1.66	0.78	0.17
15	**2FR**	Q20	Measures	3	51	1.54	2.57	1.57	1.17	0.74	0.17
16	**2FR**	Q22	Percentages	3	40	1.21	2.39	1.40	0.53	0.37	0.00
17	**1FR**	Q10	Measures	6	41	2.46	3.87	2.50	2.21	1.28	0.62
18	**1FR**	Q23	Measures	5	30	1.49	3.02	1.87	0.70	0.23	0.00
19	**1FR**	Q19	Degree of accuracy	2	32	0.63	1.09	0.58	0.56	0.08	0.50
20	**1FR**	Q22	Statistical measures	3	31	0.93	2.00	0.85	0.64	0.23	0.00
21	**1FR**	Q21	Percentages	3	25	0.75	1.57	0.78	0.34	0.23	0.00
				80	**55**	**43.79**	**63.56**	**47.83**	**36.22**	**26.13**	**15.65**

Suggested grade boundaries

Grade	5	4	3	2	1
Mark	54	41	31	21	11