

Devonport High School for Boys  
11+ Mathematics Familiarisation Paper  
Saturday 9 June 2018

Answers

1	B	2	E	3	B	4	A	5	A	6	B	7	D
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8	D	9	D	10	C	11	A	12	D	13	D	14	C
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15	E	16	E	17	B	18	B	19	D	20	C	21	A
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22	B	23	A	24	D	25	B	26	A	27	E	28	E
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29	D	30	E	31	B	32	A	33	C	34	E	35	D
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36	E	37	B	38	E	39	B	40	B	41	A	42	D
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43	C	44	C	45	D
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Notes

1 **B**  $1120 - 652 = 468$

2 **E**  $4.30\text{pm} = 16.30$

3 **B** Centre is at (5,2)

4 **A** Box plus 5 boxes makes 6 boxes, so 6 boxes equal 42 meaning box must be 7

5 **A**  $6 \times 88 = 528$

6 **B** A has 4, C, D, E have 1. Only B has 2

7 **D**  $1/5 = 0.2 = 20\%$  so  $2/5 = 0.4 = 40\%$

8 **D**  $22 - 15 = 7$

9 **D** 323.27 put numbers in correct columns

10 **C**  $1\text{kg} = 1000\text{g}$  so  $3.7\text{kg} = 3700\text{g}$

11 **A**  $66482000 - 8780000 =$

12 **D**  $1270 - 147 = 1123$ ,  $1123 - 147 = 976$ ,  $976 - 147 = 829$ ,  $829 - 147 = 682$ ,  $682 - 147 = 535$ ,  $535 - 147 = 388$ ,  $388 - 147 = 241$ ,  $241 - 147 = 94$

13 **D** 24 to -4 is gap of -24

14 **C**  $6 \times 24 = 144$ . So side 12

15 **E** Prime factors of 99 are 3 and 11

16 **E**  $\frac{1}{4}$  of £4.48 = £1.12.  $3 \times £1.12 = £3.36$

17 **B** Converting all to mm 157, 520, 451, 430, 500 so B is largest

18 **B**  $94 \rightarrow 283$ ,  $283 \rightarrow 850$

19 **D** Median middle when in order -6,-5,-2,-1,4 which is Thursday

20 **C**  $6851 \div 31$

21 **A** Digits in size order

22 **B** Largest – smallest =  $11 - 5 = 6$

23 **A** millilitres

24 **D**  $36 + 22 = 58$ ,  $180 - 58 = 122$

25 **B**  $43.4 + 1.02$  first then  $\times$  by 4

26 **A** Easiest to do  $240 \div 8$  first then  $\times 5$

27 **E** 1 hour is  $\frac{1}{24}$  of a day so a quarter hour is  $\frac{1}{96}$

28 **E** Ones ending 5 not multiple of 2. 60 not multiple of 7.

29 **D** Left side 17 – Right side 10 leaves 7

30 **E**  $60 \times 60$

31 **B** 7 Green / 15 total so  $\frac{7}{15}$

32 **A**  $6\text{h}25\text{mins} = 360 + 25\text{mins}$

33 **C** Total must be  $6 \times 9 = 54$ . Leaves 24 for last number

34 **E** Primes are 2,3,5,7,11,13,17

35 **D**  $10\% = £30$  so  $15\% = £45$  making total £345

36 **E** Only shape no equal sides and only 1 parallel pair

37 **B**  $5 \times 0.45 = £2.25$  so 35p saving

38 **E** Red is 5 out of total 25. So  $\frac{1}{5}$  of circle which is 72 degrees

39 **B**  $250\text{mg} \times 90 = 22500\text{mg} = 22.5\text{g}$   $160 - 22.5 = 137.5$

40 **B** 30degrees between each hour. At 7.30 one hour plus hour hand moved on half an hour so 45

41 **A**  $42/63$  can divide top and bottom by 7 then 3. Or by 21 directly.

42 **D** 10% of 1100 is 110 and 1% of 1100 is 11 so 24% is 264

43 **C**  $186/360 \times 180 = 186 / 2 = 93$

44 **C** 15 squared is 225

45 **D** Gap is 0.18. 49 gaps to get to 50<sup>th</sup>. So  $49 \times 0.18 = 8.82$ . 50<sup>th</sup> will be  $1.23 + 8.82$

### Approximate equivalent percentage

Score	%	Score	%	Score	%	Score	%
1	2	12	27	23	51	34	76
2	4	13	29	24	53	35	78
3	7	14	31	25	56	36	80
4	9	15	33	26	58	37	82
5	11	16	36	27	60	38	84
6	13	17	38	28	62	39	87
7	16	18	40	29	64	40	89
8	18	19	42	30	67	41	91
9	20	20	44	31	69	42	93
10	22	21	47	32	71	43	96
11	24	22	59	33	73	44	98