

# BUMPER

## "BETWEEN PAPERS 2 AND 3" PRACTICE PAPER (Q1 TO Q27)

FOUNDATION TIER (SUMMER 2017)

## EXAMINERS REPORTS & MARKSCHEME

NOT A "BEST" GUESS PAPER.

NEITHER IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME  
UP! FACT!

YOU ALSO NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 OR  
PAPER 2 IT MAY STILL COME UP ON PAPER 3

WE KNOW HOW IMPORTANT IT IS TO PRACTISE, PRACTISE, PRACTISE .... SO WE'VE  
COLLATED A LOAD OF QUESTIONS THAT WEREN'T EXAMINED IN THE PEARSON/EDExcel  
NEW 9-1 GCSE MATHS PAPER 1 AND PAPER 2 BUT WE CANNOT GUARANTEE HOW A  
TOPIC WILL BE EXAMINED IN THE FINAL PAPER  
ENJOY!

MEL & SEAGER

NB: SOME OF THESE QUESTIONS MAY HAVE ALSO BEEN INCLUDED IN THE PAPERS USED  
BETWEEN PAPERS 1 AND 2 ... THE PRACTISE IS GOOD FOR YOU!

## EXAMINERS COMMENTS

**Q1. to Q11** No Examiner's Report available for this question

**Q12.** A large number of students had no method to start this question at all. Rather than starting by listing multiples of 4 and 5 many just chose random numbers or multiples of 2 and 3.

**Q13.** This question was answered very well. In part (i), most students listed multiples of 30 and multiples of 18 and identified 90, or 180, as a common multiple. Students were not quite as successful in part (ii). Instead of giving their common multiple as the number of table decorations some students divided it by 2 or multiplied it by 2.

**Q14.** This question about powers proved a bit too difficult for many candidates. Part (a) was the best answered as candidates could use their calculators to work out the correct answer but after this candidates did struggle with  $p^5$  often being given as an incorrect answer for (b). Part (c) was usually better answered and in part (d) a few more gave the correct answer of 6.

**Q15.** No Examiner's Report available for this question

**Q16.** In part (a), most candidates gained at least one mark giving at least 4 of the correct integers. There were some errors interpreting the difference between the inequality symbols with confusion as to whether -2 and 3 should be included. Some candidates appeared to have misunderstood the question and gave a final answer of 5 to indicate how many integers met the inequality. Candidate's answers for part (b) included both formal algebraic solutions and trial and improvement methods. Trial and improvement often yielded the correct integer answer from straightforward inspection whereas, many candidates who reached  $11/3$  did not go on to give 4 as their final answer and so lost the final mark.

**Q17.** In part (a), writing down the possible values of  $n$  was well done with just over half of candidates scoring both marks. About a fifth scored one mark, generally for not including the -2 in their answer. Surprisingly many of the candidates who scored one mark missed out the 0. A number of candidates drew inequalities diagrams as an aid to help them find the values.

In part (b), most candidates scored no marks. The most common error was to just list the integer values whilst some wrote inequalities without any letters. A few candidates either got the inequality signs mixed up or only got one of the signs the correct way and so only scored one mark. Many candidates used  $n$  or  $N$  rather than  $x$ , but were not penalised for this.

**Q18.** No Examiner's Report available for this question

**Q19.** Point  $E$  was correctly identified as the answer for part (a) by most students. The most common incorrect response was  $D$ , corresponding to the point (1, 4).

In part (b) students usually plotted a point which with points  $A$ ,  $B$  and  $C$  formed a kite. Sometimes students failed to label the point but the mark was awarded provided the answer was unambiguous. Writing down the coordinates of  $P$  was not done as well as might have been expected with many students writing down the  $y$  coordinate as the  $x$  coordinate and vice versa.

**Q20.** No Examiner's Report available for this question

**Q21.** This six-mark question testing functional elements for understanding a bank account with the interpretation of a line graph was well-answered. Candidates scored good marks in the graphical interpretation, and part (a) gave a good spread of marks as some candidates mixed up the £85 going out instead of in and the £45.56 going in rather than being taken out.

**Q22.** No Examiner's Report available for this question

**Q23.** The first three parts of this question were answered quite well with a correct response from 72%, 63% and 88% of candidates, respectively. Part (d) was also well done though some lack of care was evident with a significant number of candidates either misreading the temperature scale or making an error in their arithmetic. The incorrect answer 10 was commonly seen. Candidates who wrote down the subtraction of their two temperatures were more likely to gain potential credit in such circumstances. Few did.

**Q24.** Many candidates scored some marks on this question. There were often able to find the median from the stem and leaf diagram although 66 was a common error. The range was less successfully answered. Most candidates showed no working for this part of the question. Those that did, with incorrect answers, used 81 as the largest value. Another common error was just to give 58 as the range. In part (c) candidates were expected to compare, whilst many wrote the correct managed to say something plausible for the raise in the median values, few pupils made correct comments about the increase in the range. Too many candidates gave long explanations about what exercise does to your body and did not concentrate on the mathematics.

**Q25.** No Examiner's Report available for this question

**Q26.** No Examiner's Report available for this question

**Q27.** Only a minority of students chose to derive a set of simultaneous equations to solve. The majority of students used a trial and improvement approach to the solution, which could only be credited on giving the correct answers. Common incorrect answers scoring 0 marks were £7.50 (from  $30 \div 4$ ) and £5.50 (from  $22 \div 4$ ).

## Mark Scheme

Q1.

Paper 1MA1: 1F			
Question	Working	Answer	Notes
(a)		$\frac{17}{35}$	M1 for common denominators with at least one numerator correct A1
(b)		$\frac{20}{9}$	M1 for $\frac{5}{3} \times \frac{4}{3}$ or $\frac{20}{12} \div \frac{9}{12}$ A1

Q2.

Paper 1MA1: 1F			
Question	Working	Answer	Notes
		12	M1 M1 for $0.15 \times 80$ oe or $8 + 4$ A1 cao

Q3.

Paper 1MA1: 2F			
Question	Working	Answer	Notes
		63	M1 for a method to find A1 percentage of a quantity

Q4.

Question	Working	Answer	Notes
a		$\frac{1}{4}$	M1 For $\frac{x}{24}$ with $x < 24$ or $\frac{6}{y}$ with $y > 6$ A1 for $\frac{6}{24}$ oe
b		PP PM PW MM MW WW	M1 At least 3 correct combinations A1 Fully correct list with no extras or permutations

Q5.

Question	Working	Answer	Notes
(a)		36.4	P1 start process eg method to find area of trapezium P1 complete process to find volume of tank P1 process to find time eg volume $\times 1000 \div 300$ P1 process to find 85% of volume or of time A1 for 36.4 or 36 mins 24 secs
(b)			C1 explanation eg if the average rate was slower it would take more time, if the average rate was faster it would take less time

**Q6.**

Paper 1MA1: 2F			
Question	Working	Answer	Notes
		66.9	<p>P1 for process to find the area of one shape, eg. <math>19 \times 16 (= 304)</math> or <math>\pi \times 8^2 (= 201.06\dots)</math></p> <p>P1 for process to find the shaded area, eg. "304" – "201.06" <math>\div 2 (= 203.46\dots)</math></p> <p>P1 for a complete process to find required percentage, eg. <math>\frac{203.46}{304} \times 100</math></p> <p>A1 for answer in range 66 to 68</p>

**Q7.**

Question	Working	Answer	Notes
		5.25 litres	<p>P1 for start to process eg. <math>5 \div 2 (= 2.5)</math></p> <p>P1 for complete process eg. <math>5000 + 2.5 \times 100</math></p> <p>A1 or 5250 ml</p>

**Q8.**

Paper 1MA1: 2F			
Question	Working	Answer	Notes
		720	<p>P1 attempt to find the maximum biscuits for one of the ingredients e.g. <math>5000 \div 15 (= 33.3\dots)</math> or <math>2500 \div 75 (= 33.3\dots)</math> or <math>3000 \div 100 (= 30)</math> or <math>320 \div 10 (= 32)</math></p> <p>P1 for identifying butter as the limiting factor or <math>30 \times 24 (= 720)</math> seen</p> <p>A1</p>

**Q9.**

Paper 1MA1: 1F			
Question	Working	Answer	Notes
		$\frac{2}{7}$	B1

**Q10.**

Paper 1MA1: 2F			
Question	Working	Answer	Notes
		$\frac{53}{64}$	<p>P1 for interpreting information e.g. recognising that the shaded area = <math>\frac{3}{4} + \left(\frac{1}{4} \times \frac{1}{4}\right) + \left(\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}\right)</math></p> <p>or adding in lines to diagram to show 64ths</p> <p>A1 cao</p>

**Q11.**

Question	Working	Answer	Notes
		8, 12, 20 or 4, 8, 28 or 4, 12, 24 or 4, 16, 20	<p>P1 Adds 3 different multiples of 4</p> <p>A1</p>

### Q12.

5MB2F November 2016					
Question	Working	Answer	Mark	Notes	Type
	6, 10, 14, 18 8, 13, 18	18	3	M1 for listing at least 3 multiples of 4 and at least 3 multiples of 5 M1 for adding 2 to multiples of 4 and adding 3 to multiples of 5 A1 for 18 cao	E

### Q13.

PAPER: 5MB2F_01					
Question	Working	Answer	Mark	Notes	
(i)		candles 3 holders 5	5	M1 for listing multiples of either 30 or 18 (at least 3 but condone errors if intention is clear) M1 for listing multiples of both 30 and 18 (at least 3 but condone errors if intention is clear) M1 (dep on M1) for division by 30 or 18 or counts up multiples (implied if one answer is correct or answers are reversed) A1 candles (packs) 3, holders (packs) 5 or any same multiple of 3,5 OR M1 expansion of either number in factors M1 demonstrates one of the expansions that includes 6 oe M1 demonstrates second expansion that includes 6 oe A1 candles (packs) 3, holders (packs) 5 or any same multiple of 3,5	
(ii)		90		B1 for 90 or ft on both their packs or ft "common multiple" NB: accept consistent multiples of the given answer	

### Q14.

PAPER: 1MA0_2F					
Question	Working	Answer	Mark	Notes	
(a)		92.3521	1	B1 cao	
(b)		$p^6$	1	B1 cao	
(c)		$t^5$	1	B1 cao	
(d)		6	1	B1 cao	

### Q15.

Paper 1MA1: 2F					
Question	Working	Answer	Notes		
(a)		1.5 oe	M1 for rearranging, eg $11 - 5 = 4c$ A1		
(b)		-3	M1 for a first step of either dividing both sides by 5, eg. $\frac{5(e+7)}{5} = \frac{20}{5}$ or for expanding the bracket, eg. $5 \times e + 5 \times 7 = 20$ A1 cao		
(c)		$m^6$	B1		



**Q16.**

Question	Working	Answer	Mark	Notes
(a)		-1, 0, 1, 2, 3	2	B2 for correct 5 values which may be in any order with no repeats (B1 four correct values and none incorrect or -2, -1, 0, 1, 2, 3)
(b)	$3x > 11$ $x > \frac{11}{3}$ or 3.66.. OR $(16 - 5) \div 3$ $\frac{11}{3}$ or 3.66..	4	3	M1 $3x > 11$ or $3x > 16 - 5$ or $3x + 5 - 5 > 16 - 5$ A1 $\frac{11}{3}$ or 3.6(66..) or 3.7 (Accept = or $\geq$ in place of >) B1 ft OR M1 $(16 - 5) \div 3$ A1 $\frac{11}{3}$ or 3.6(66..) or 3.7 B1 ft

**Q17.**

Question	Working	Answer	Mark	Notes
(a)		-3, -2, -1, 0, 1	2	B2 for all 5 values and no others (B1 for 4 correct values and no others or -4, -3, -2, -1, 0, 1 or -3, -2, -1, 0, 1, 2)
(b)		$-2 \leq x < 4$	2	B2 for $-2 \leq x < 4$ (B1 for $-2 \leq x$ or $x < 4$ or $-2 < x \leq 4$ ) [Note: accept the use of any letter other than x throughout and ignore any attempt to list integer values]

**Q18.**

Paper 1MA1: 2F			
Question	Working	Answer	Notes
(a)		(0, -1)	B1
(b)		× marked at (3, 0)	B1
(c)		(-0.5, 0.5)	B1

**Q19.**

Question	Working	Answer	Mark	Notes
(a)		E	1	B1 cao
(b)(i)		P marked	2	B1 for correct point marked, eg (1, -1)
(ii)		coordinates of P		B1 for correct coordinates for 'point'

**Q20.**

Question	Working	Answer	Mark type	AO	Notes
(a) (i)		Correct drawing	M	1.3a	M1 for a correct bearing drawn or for a correct distance drawn or quoted
(a) (ii)		230°	A	1.3a	A1 for a correct position of <i>B</i>
			B	1.1	B1 for 230° cao
(b)		Correct statement with evidence	P	2.3a	P1 for drawing a correct right-angle triangle showing line East from <i>A</i> and perpendicular from <i>B</i> (can be implied by correct trigonometric ratio)
			M	1.3b	M1 for $\cos 50^\circ = \frac{d}{36}$ oe
			P	2.2	P1 for $36 \times \cos 50^\circ$ oe
			C	2.1a	C1 for deduction 23.14 km plus a statement saying that the ship is always more than 23 km from the lighthouse

**Q21.**

	Working	Answer	Mark	Notes
(a)		175.14	3	M1 for $135.70 + 85 (= 220.70)$ or $135.70 - 45.56 (= 90.14)$ or $85 - 45.56 (= 39.44)$ or $45.56 - 85 (= 39.44)$ M1 for correct complete method, eg. $135.70 + 85 - 45.56$ A1 cao
(b)		700	1	B1 cao
(c)		November	1	B1 for Nov oe
(d)		April , August	1	B1 for April and August oe

**Q22.**

Question	Working	Answer	Mark type	AO	Notes
(a)		Comparisons	C	2.3a	C1 for a correct interpretation of diagram, e.g. correct median, LQ or UQ
	F M		C	2.3b	C1 for a correct comparison of a measure of central tendency (must be in context of the data)
	Lv 75 76				
	Lq 80 83				
	Median 85 92		C	2.3b	C1 for a correct comparison of a measure of spread (must be in context of the data)
	Uq 96 98				
	Hv 99 107				
(b)	Range 24 31	Correct Venn diagram	P	2.3a	P1 for two overlapping circles with 5 in the overlap
			C	2.3b	C1 for a fully correct Venn diagram with labels



**Q23.**

Question	Working	Answer	Mark	Notes
(a)		July and August	1	B1 (allow incorrect spellings or abbreviations as long as the intention is clear)
(b)		April	1	B1 (allow incorrect spelling or abbreviation as long as the intention is clear)
(c)	24–13	14	1	B1 cao
(d)		11	2	M1 for attempt to read off and subtract (eg 24–13) A1 for 11 (accept – 11)

**Q24.**

Question	Working	Answer	Mark	Notes
(a)		67	1	B1 cao
(b)	84 – 58 = 26	26	2	M1 for 84 – 58 , accept 58 to 84 and 58 – 84 A1 cao
(c)		Two comparisons	2	Ft B1 for heart rates faster after walking , bigger median, median increase by 11 Ft B1 for heart rates more spread out after walking, bigger range, range increases by 11 Statements must be entirely true and not contradictory

**Q25.**

Paper 1MA1: 2F			
Question	Working	Answer	Notes
(a)		$160 < h \leq 170$	B1 for identifying the correct class interval
(b)		1. Points should be plotted at mid-interval values 2. The polygon should not be closed	C1 for a correct error identified C1 for a correct error identified

**Q26.**

Paper 1MA1: 1F			
Question	Working	Answer	Notes
		$x=7, y=-3$	M1 for correct process to eliminate one variable (condone one arithmetic error) M1 (dep) for substituting found value in one of the equations or appropriate method after starting again (condone one arithmetic error) A1 for both correct solutions

**Q27.**

PAPER: 1MA0_2H				
Question	Working	Answer	Mark	Notes
	$3x + y = 30$ $x + 3y = 22$	8.50 4.50	4	M1 for forming two algebraic equations M1 for a correct process to eliminate one variable (condone one arithmetic error) M1 (dep) for substituting found value in one of the equations or appropriate method after starting again (condone one arithmetic error) A1 for 8.5(0) and 4.5(0)