SCALE DRAWINGS

Pearson Edexcel - Tuesday 12 June 2018 - Paper 3 (Calculator) Foundation Tier

1.

12	69.2	B1 P1 P1 P1 A1	for a correct measurement of either length or width, eg 11.5 (cm) **or** 5.8 (cm) for process to find actual dimensions, eg [length] × 200 (= 2300) **or** [width] × 200 (= 1160) (indep) for process to convert to metres [length in cm] ÷ 100 eg "2300" ÷ 100 (= 23) **or** "1160" ÷ 100 (= 11.6) (indep) for process to find the perimeter, eg"23" × 2 + "11.6" × 2 (= 69.2) **or** "11.5" × 2 + "5.8" × 2 (= 34.6) for an answer in the range 67.6 to 70.8	Allow measurements 11.3 to 11.7 cm and 5.6 to 6.0 cm NB: could work in mm [length] in the range 11.0 to 12.0 [width] in the range 5.0 to 6.5 NB: could work in mm This mark can be awarded for the conversion of any amount in cm to m (ie not from an area) calculations could be in cm or in m and could be scaled or unscaled figures SC: award 3 marks for an answer in the range 67.6 to 70.8 using measurements outside the above ranges

Pearson Edexcel - Wednesday 8 November 2017 - Paper 3 (Calculator) Foundation Tier

2.

8		30	M1 A1	for 12 m = 1.9 to 2 cm or for a scale factor of 2.25 to 2.75 (comparing length of bus with height of the building) or a **complete** method using the height of the bus to compare with the height of the building. answer in range 27 to 33

Pearson Edexcel – Specimen 2 - Paper 3 (Calculator) Foundation Tier

3.

8		34	M1 A1	for first step in process eg 17×200 (= 3400) cao

Pearson Edexcel – Specimen 1 - Paper 1 (Non-Calculator) Foundation Tier

4.

15		no with evidence	P1 P1 C1	interprets the scale for 2 dimensions on diagram or in calculations. a complete process to find comparative figures. "no" with correct figures.

Pearson Edexcel – Specimen 1 - Paper 2 (Calculator) Foundation Tier

5.

12		12	P1 A1	for correct use of scale, eg 360 ÷ 30 or 3.6 ÷ 30 cao

Pearson Edexcel – Specimen 1 - Paper 3 (Calculator) Foundation Tier

6.

9		–16, 32	P1 for 48 ÷ 6 P1 for a complete process to find either A or B A1

OCR – Tuesday 03 November 2020- Morning - Paper 1 (Calculator) Foundation Tier

7.

11			4	**3**	**M2** for 8 × 50 000 ÷ 100 ÷ 1000 oe or **M1** for one correct step from 8 × 50 000 ÷ 100 000 e.g. 8 × 50 000 or *their* (50 000 ÷ 100…) × 8	e.g. 0.5 × 8 Division by 100 000 may be in stages **M1** may be implied by 400 000, 0.5 or 0.000 08 Need to see the calculation for e.g. *their* (50 000 ÷ 100…)

OCR Thursday 07 November 2019- Morning (Non-Calculator) Foundation Tier

8.

9	**(a)**		22	**2**	Accept 21.2 to 22.8 **M1** for 5.3 to 5.7 [cm] seen Or 53 to 57 [mm] seen	May be seen on diagram or on the answer line
9	**(b)**		063 to 067	**1**		Condone eg 65
9	**(c)**		Lighthouse indicated correctly 4.3 to 4.7 cm from P and on bearing of 198 to 202 from Q	**2**	**M1** for either condition correct	Allow unambiguous indication if a cross is not seen For M1 allow an arc/circle centre P with radius 4.3 to 4.7 cm Use overlay as a guide

OCR Thursday 07 November 2019- Morning (Non-Calculator) Foundation Tier

9.

17			Line drawn parallel to AB, 1.8 to 2.2 cm away that meets AD and *their* bisector of angle BCD	**M1**		Condone dotted lines throughout Use overlay as a guide If no angle bisector *their* horizontal line must at least touch the left hand boundary of angle bisector overlay
			Bisector of angle BCD drawn with correct arcs	**M2**	**M1** for correct bisector with no/incorrect arcs	±2°
			Arc centre D with radius 2.8 to 3.2 cm	**M2**	**M1** for any arc centre D	Arc must meet AD and DC for 1 or 2 marks
			Correct region shaded	**A1**	Dep on **M1 M1 M2**	Accept region clearly identified

OCR Monday 12 November 2018 – Morning (Calculator) Foundation Tier

10.

23	**(a)**		180 ÷ 3.5 × 11.2 = 576 or 180 ÷ 3.5 = 51.4[…] **and** 576 ÷ 11.2 = 51.4[…] or 576 ÷ 180 = 3.2 **and** 11.2 ÷ 3.5 = 3.2	**3**	**M2** for 180 ÷ 3.5 × 11.2 or 180 ÷ 3.5 **and** 576 ÷ 11.2 or 576 ÷ 180 **and** 11.2 ÷ 3.5 or **M1** for 180 ÷ 3.5 soi 51.4[…] or 576 ÷ 11.2 soi 51.4[…] or 576 ÷ 180 soi 3.2 or 11.2 ÷ 3.5 soi 3.2	For M marks allow figs used eg **M2** for 18 ÷ 350 × 112 If in two stages: For full marks, condone premature rounding if accurate and answer is stated as 576. e.g. **3** marks for 180 ÷ 3.5 = 51.4 and 51.4 × 11.2 [= 575.68 or 575.7] **= 576 (required)** eg **M2** for 180 ÷ 3.5 = 51.5 and 51.5 × 11.2 = 576 Accept equivalent methods eg divisions inverted or correct use of lengths in other units.
	(b)		No oe and correct explanation	**2**	**B1** for 180 ÷ k × 11.2 where $k > 3.5$ leading to answer <576 or [180 ÷ 3.5 =] 51.4… **and** 180 ÷ k, $k >$ 3.5 leading to answer <51.4(…) or Each cm on the map will be worth fewer km in real life oe	For full marks, clear conclusion and an explanation earning **B1** is needed [180 ÷ 3.5 =] may be referred to in (a)
	(c)		7500 cao	**2**	**M1** for figs 18 ÷ figs 24 soi figs 75	If units included in answer max M1

OCR Monday 24 May 2018 – Morning (Calculator) Foundation Tier

11.

19	**(a)**		610.7 to 632.2	**5**	**B2** for 1425 to 1475 or **B1** for 11.4 to 11.8 or **M1** for *their length* × 125 AND **B1** for $2\frac{1}{3}$, 2[h] 20 or 2.33… or 140 and **M1** for distance ÷ time and **A1FT** ft for a correct answer for *their length*	See additional guidance This calculation must be seen and distance must be *their* measurement or *their* measurement × 125. You must be convinced that it is a time as a divisor.
	(b)		accept any correct reason e.g. it may not have flown in a straight line or it may have been diverted	**1**		If more than one choose the best one. Comment about distance only, see list of exemplars.

12.

20	**(a)**		Accurate angle bisector with 2 pairs of correct arcs	**2**	**B1** for correct bisector with no arcs or incorrect arcs	The bisector does not have to go through A but if extended it must go through A and it must lie within green lines in overlay. For **2** marks condone intersecting arcs of equal radius, one centre B and the other centre C for the construction with bisector drawn.
			Arc centre C radius 7cm	**2**	**B1** for arc centre C with incorrect radius	For arc, measure radius using ruler. tolerance ± 2 mm and ± 2° for both constructions
			Correct region indicated	**1Dep**	Dependent on at least **B1** for bisector and **B2** for arc	
	(b)		accept any correct assumption e.g. Road[s] is not/are not straight, road AB is busier than road AC, land is not suitable for construction	**1**		If more than one choose the best one see list of exemplars

OCR Thursday 2 November 2017– Morning (Calculator) Foundation Tier

13.

20	**(a)**		Accurate perpendicular bisector from at least AB passing within 3cm of C with two pairs of correct arcs	**2**	**B1** for accurate perpendicular bisector	Tolerance ±2mm
			Arc centre C, at least from BC to CD with radius 3 cm	**2**	**B1** for any arc centre C	
			Two correct points marked intersecting the line and the arc	**1**	**Dep** on **B1** (bisector) and **B2** (arc) scored above	
	(b)		One of the points is not in his garden or only one is in his garden	**1**	accept any correct reason e.g. one point is behind the *CD* fence	

Pearson Edexcel –Sample Papers - Paper 2 (Calculator) Foundation Tier

14.

15		22.5	M1 A1	interpret information eg use the scale

OCR Thursday 25 May 2017 – Morning (Calculator) Foundation Tier

15.

13	**(a)**		3 cao	**1**		
	(b)		1.5	**3**	**M1** for 6 × 25000 soi by 150 000 or **B1** for figs 15 or 1cm :0.25km and **M1** for *their* 150000 ÷ 100 000 or for *their* 0.25 x 6	
	(c)		$\frac{6}{13}$	**1**		

AQA Thursday 4 June 2020 – Morning (Calculator) Foundation Tier

16.

Q	Answer	Mark	Comments
19	**Alternative method 1**		
	6.5 – 4 or 2.5	M1	
	50 ÷ their 2.5 or 50 × 100 ÷ their 2.5 or 2000	M1dep	oe
	1 cm represents 20 metres	A1	
	Alternative method 2		
	80 and 130 seen	M1	
	80 ÷ 4 with 130 seen or 130 ÷ 6.5 with 80 seen	M1dep	oe eg 20 × 4 = 80 with 130 seen
	1 cm represents 20 metres	A1	
	Additional Guidance		
	In Alt 1, 65 – 40 unless recovered		M0
	In Alt 1, 0.065 – 0.04 unless recovered		M0
	In Alt 2, 0.08 and 0.13 unless recovered		M0

AQA Thursday 6 June 2019 – Morning (Calculator) Foundation Tier

17.

12	**Alternative method 1**		
	10×40 or 400 or 18×40 or 720	M1	
	$10 \times 40 \times 18 \times 40$	M1dep	oe implies M2
	288 000	A1	implies M2A1
	Kitchen	A1ft	correct decision for their area with M2 awarded accept 300 000 for Kitchen
	Alternative method 2		
	10×18 or 180 **and** 40^2 or 1600	M1	oe $10 \times 18 \times 40$ **and** $300\,000 \div 40$ implies M2
	$10 \times 18 \times 40^2$ or 10×18 **and** $300\,000 \div 40^2$	M1dep	
	288 000 or 180 **and** 187.5 or 7200 **and** 7500	A1	implies M2A1
	Kitchen	A1ft	correct decision for their area with M2 awarded accept 300 000 for Kitchen

12 cont	**Alternative method 3 (working in metres)**		
	0.1 × 40 or 4 or 0.18 × 40 or 7.2	M1	
	0.1 × 40 × 0.18 × 40 or 28.8	M1dep	oe implies M2
	28.8 **and** 30	A1	implies M2A1
	Kitchen	A1ft	correct decision for their area with M2 awarded accept 300 000 for Kitchen
	Alternative method 4 (working in metres)		
	0.1 × 0.18 or 0.018 **and** 40^2 or 1600	M1	oe 0.1 × 0.18 × 40 **and** 30 ÷ 40 implies M2
	0.1 × 0.18 × 40^2 or 28.8 or 0.1 × 0.18 **and** 30 ÷ 40^2	M1dep	
	28.8 **and** 30 or 0.018 **and** 0.01875 or 0.72 **and** 0.75	A1	implies M2A1
	Kitchen	A1ft	correct decision for their area with M2 awarded accept 300 000 for Kitchen

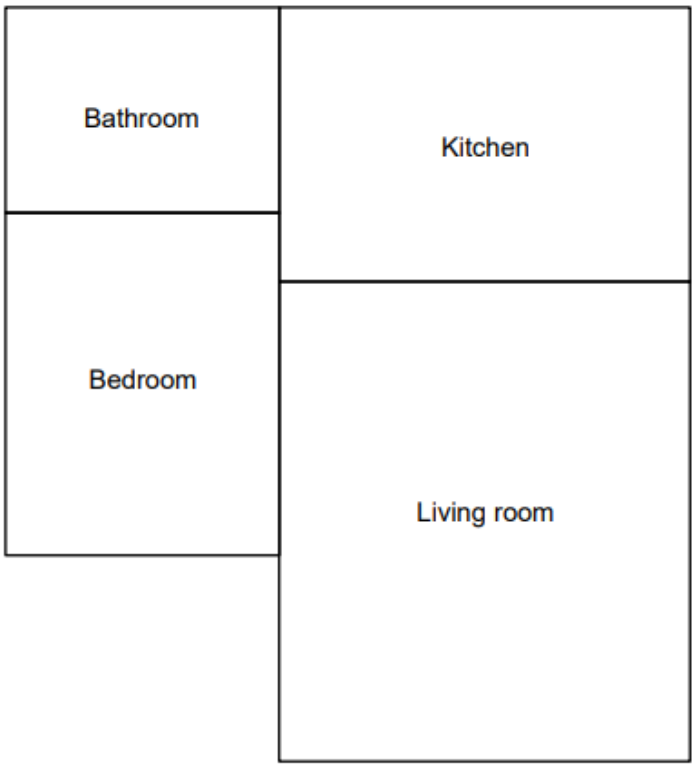
12 cont	**Additional Guidance**	
	288 000 and Kitchen	M1M1A1A1
	288 000	M1M1A1
	10 × 40 = 4000, 18 × 40 = 720 and 2 880 000 and Bedroom	M1M1A0A1ft
	4000 and 720 and 2 880 000 and Bedroom (only 720 scores)	M1M0A0A0ft
	Ignore any incorrect attempt to subtract 288 000 from 300 000	
	Any attempt to change units must be correct	
	NB 10 × 40 = 400, 10 × 18 = 180 400 × 180 = 72 000 and 300 000 – 72 000 = 228 000 and Kitchen	M1 M0A0A0

AQA Monday 12 November 2018 – Morning (Calculator) Foundation Tier

18.

6	Any room correctly drawn to scale or any outline dimension correctly drawn to scale or any room dimension or outline dimension correctly scaled and clearly related	M1	± 2 mm may be on diagram
	At least two rooms correctly drawn to scale in correct position or correctly drawn outline of plan to scale	M1dep	± 2 mm
	Fully correct scale drawing with correct room labels	A1	± 2 mm for outline and internal lines all lines must be ruled
	Additional Guidance		
	For 2nd method mark there should not be a gap shown between rooms correctly drawn to scale in correct position		
	Fully correct scale drawing with incorrect or missing room labels		M1M1A0
	Check original diagram for clearly related scaled dimensions eg 8 (feet =) 4 (cm)		M1
	Any correct outline dimension eg 16 (feet =) 8 (cm) or 20 (feet =) 10 (cm) or 22 (feet =) 11 (cm)		M1

Additional Guidance continues on next page

6 cont	 Fully correct scale drawing with correct room labels	

AQA Monday 12 November 2018 – Morning (Calculator) Foundation Tier

19.

17	[4.5, 4.9] (cm) or [45, 49] (mm)	M1	measurement
	their measurement ÷ 1.5 or [4.5, 4.9] ÷ 1.5 or [45, 49] ÷ 15 or [3, 3.3] or 200 ÷ 1.5 or 133.(3…)	M1	oe
	600 or 613.(...) or [626, 627] or 640 or 653.(...) or correct answer from their [4.5, 4.9] (cm) or their [45, 49] (mm), rounded or truncated	A1	SC2 [600, 660]
	Additional Guidance		
	600 on answer line with no working or measurement shown		M1M1A1
	4.7 cm measured 4.5 ÷ 1.5 = 3 and 600 0.2 × 200 = 40 with answer 640 (incorrect scaling method of 0.2 cm)		M1M1A0
	Measurement of 4.7 cm with answer 640 (incorrect answer for their measurement)		SC2
	200, 200, 200 marked on diagram implies 4.5 and 3		M1M1
	200 × 3 without measurement shown implies 4.5 and 3		M1M1

17	[4.5, 4.9] (cm) or [45, 49] (mm)	M1	measurement
	their measurement ÷ 1.5 or [4.5, 4.9] ÷ 1.5 or [45, 49] ÷ 15 or [3, 3.3] or 200 ÷ 1.5 or 133.(3…)	M1	oe
	600 or 613.(...) or [626, 627] or 640 or 653.(...) or correct answer from their [4.5, 4.9] (cm) or their [45, 49] (mm), rounded or truncated	A1	SC2 [600, 660]
	Additional Guidance		
	600 on answer line with no working or measurement shown		M1M1A1
	4.7 cm measured 4.5 ÷ 1.5 = 3 and 600 0.2 × 200 = 40 with answer 640 (incorrect scaling method of 0.2 cm)		M1M1A0
	Measurement of 4.7 cm with answer 640 (incorrect answer for their measurement)		SC2
	200, 200, 200 marked on diagram implies 4.5 and 3		M1M1
	200 × 3 without measurement shown implies 4.5 and 3		M1M1

AQA Thursday 24 May 2018 – Morning (Non-Calculator) Foundation Tier

20.

18	1 : 100 000	B1	
	Additional Guidance		

AQA Tuesday 12 June 2018 – Morning (Calculator) Foundation Tier

21.

10	**Alternative method 1**		
	2 (cm) and 10 (cm) or (scale factor =) 5	M1	each ± 0.2 cm oe implied by 650 in working
	130 × 5 or 130 ÷ their 2 × their 10	M1dep	oe
	650	A1ft	ft [1.8, 2.2] and [9.8, 10.2] SC2 [635, 665]
	Alternative method 2		
	2 (cm) and 130 ÷ their 2 or 65	M1	± 0.2 cm
	10 (cm) and their 65 × their 10	M1dep	± 0.2 cm
	650	A1ft	ft [1.8, 2.2] and [9.8, 10.2] SC2 [635, 665]
	Additional Guidance		
	Do not accept marked graduations on diagram as a scale factor		
	Allow consistent use of mm throughout		
	2 and 9.9 followed by 130 ÷ 2 × 9.9 with answer 643.5 or 644		M1M1A1ft
	130 × 4 + 124 = 644		SC2
	2.1 and 10.1 followed by 130 ÷ 2.1 × 10.1		M1M1
	130 × 4 (= 520) + 130		M1M1
	(130 × 5 =) 650 followed by 650 – 130		M1M0
	(130 × 5 =) 650 followed by 130 × 650 = 84 500		M1M0
	1:5 or 5:1 is oe (scale factor =) 5		M1
	130 × 4 (= 520)		M0

AQA Tuesday 12 June 2018 – Morning (Calculator) Foundation Tier

22.

16	*AC* has length [7.8, 8.2] cm and Angle *CAB* is [35, 39]° and full triangle is drawn	B2	B1 for *AC* has length [7.8, 8.2] cm and if redrawn *AB* has length [10.8, 11.2] cm or Angle *CAB* is [35, 39]°
	Additional Guidance		
	Ignore labelling		
	Sides need to be ruled for B2		
	If *AB* is redrawn, it must have length [10.8, 11.2] cm for B2		
	If two triangles drawn, the one on the given line *AB* takes precedence, unless crossed out		

AQA Wednesday 8 November 2017 – Morning (Calculator) Foundation Tier

23.

15a	[6.9, 7.1] (cm)	B1	
	[345, 355]	B1ft	ft their [6.9, 7.1] × 50
	Additional Guidance		
	[345, 355] without sight of [6.9, 7.1]		B1B1

15b	*R* marked [3.9, 4.1] cm due South of *P*	B2	B1 for *R* marked [3.9, 4.1] cm from *P* or *R* marked due South of *P* or 4 (cm) seen

AQA Thursday 8 June 2017– Morning (Calculator) Foundation Tier

24.

8(a)	Library	B1	

8(b)	180°	B1	

8(c)	[5.6, 6] (cm) or [56, 60] (mm)	B1	May be on map
	their 5.8 × 200 or their 58 × 20	M1	
	[1120, 1200]	A1ft	ft B0M1 if their 5.8 × 200 correctly evaluated
	Additional Guidance		
	[5.6, 6] can come from measurement or Pythagoras' Theorem		
	Answer in correct range with no incorrect evaluation		B1M1A1
	5.6 × 200, answer 1160	(incorrect evaluation seen)	B1M1A0
	6.2 × 200 = 1240		B0M1A1ft
	3 down, 5 across, 8 × 200 = 1600		B0M1A1ft
	3 × 200, 5 × 200, answer 1600		B0M1A1ft
	3 and 5 seen, answer 1600		B0M1A1ft
	7 seen, answer 1400	(scale method implied)	B0M1A1ft
	Answer only 1400		B0M0A0ft
	Answer [1.12, 1.2] km with or without [1120, 1200] seen		B1M1A0

8(d)	Valid reason	B1	Indication that the shortest distance between two points is a straight line, but you can't generally walk in a straight line between two places in a town
	Additional Guidance		
	You would have to walk along the streets		B1
	There wouldn't be a straight road between them		B1
	You would have to walk along and then down		B1
	There might be buildings in the way		B1
	You can't go as the crow flies		B1
	There may be obstacles in the way		B1
	It isn't a straight path in real life		B1
	Can't go directly		B1
	There might be buildings in the way such as the library		B0
	The monument is in the way		B0
	It's not a walking route		B0
	There is more than one route		B0
	May have taken a different route		B0
	Walking is slower		B0
	You may need to go past the town hall		B0
	You might take a detour		B0

AQA Sample Paper 2– Morning (Calculator) Foundation Tier

25.

5	[8.4, 8.8] (× 2.5)	M1	
	[21, 22]	A1	SC1 Any given length in cm correctly multiplied by 2.5

AQA Sample Paper 2– Morning (Calculator) Foundation Tier

26.

16	Sketch of possible pentagon with exactly one line of symmetry, integer sides labelled, perimeter 15 cm ie 1 × 7 cm and 4 × 2 cm 1 × 7 cm and 2 × 3 cm and 2 × 1 cm 1 × 5 cm and 2 × 4 cm and 2 × 1 cm 1 × 5 cm and 2 × 3 cm and 2 × 2 cm 1 × 3 cm and 2 × 5 cm and 2 × 1 cm 1 × 3 cm and 2 × 4 cm and 2 × 2 cm 3 × 1 cm and 2 × 6 cm 1 × 1 cm and 2 × 5 cm and 2 × 2 cm 1 × 1 cm and 2 × 4 cm and 2 × 3 cm 5 × 3 cm (but sketch clearly only has 1 line of symmetry)	B2	B1 regular pentagon with 5 × 3 cm labelled or (impossible) pentagon with sides labelled eg 1 × 11 cm and 4 × 1 cm or pentagon with one line of symmetry and non-integer sides labelled, perimeter 15 Units not needed