1				for evidence of taking a reading from the for answer in the range 11.8 to 12.2	graph from $h = 160$		
					-1		
2	(a)			57	57 B1 cao		
	(b)	Decision and reason		C1	Jamil might not be correct and reason, eg the maximum weight could be less than 80 or the minimum weight could be less than 40		
	(c)			Shown		for evidence of reading from the graph at weight 65 (= 48 to 49) or at cf 45 (= 63)	
					C1	eg 25% of 60 is 15 but only 11 potatoes have a weight greater than 65g or 25% of potatoes have a weight greater than 63g	
3	(a)	box plot drawn	B1	ends of whisker	ends of whiskers at 0 and 42 with a box		The box can be of any height. Accept ends that are marked (eg line, cross, dot) or defined by the end of the whiskers if clear.
			B1	median at 10 in	side a box		Has to be inside a box; whiskers not required
			B1	for ends of box	at 4 and 2	0	An independent mark that can be awarded for just a box; do not need whiskers for this mark.
	(b)	Comparison	C1	for a correct cor was greater than	mparison on the medi	of medians, eg. the median delay time on Mon an delay time on Tues. or ft (a)	Simply quoting values for median, range and IQR is insufficient, they must be compared
			C1	range (range) of range (range) of	f delay tim f delay tim	of a measure of spread, eg. the interquartile tes on Mon was greater than the interquartile tes on Tues. or ft (a) the state of the comparisons must be in	Comparisons can relate to the median, and then either the range or the IQR.
	(c)	statement	C1	'No' with statement explaining that there might not be any delays between 25 minutes and 30 minutes as in the upper 25% (12 trains) the delays may all be between 17 and 25 or 30 and 33		0 minutes as in the upper 25% (12 trains) the	The 'No' may be implied from their wording, and could be written next to the "?" The statement must mention (or imply) values above the UQ of 17
			-		-		-
4	(a)	5, 35, 55, 70, 78, 80	B1	cao			-
	(b)	cf graph	M1	for 5 or 6 of the	for 5 or 6 of their points plotted correctly from a cf table		Ignore to the left of the first point and right of the last point
			A1	for a fully corre	ct graph		Accept a smooth curve or line segments
					d joined b	ints plotted not at end but consistent within y a curve or line segments providing no	
	(c)	7.5	M1	for a clear method to read off the cf graph at 90		off the cf graph at 90	Sight of 74 or 6 implies M1
			М1	for a full metho	for a full method to find the percentage eg (80 $-$ "74") \div 80 \times 100 (=7.5)		The following readings give the following percentages
			A1	for 7.5 or ft cf graph			72 = 10% 73 = 8.75% 74 = 7.5% 75 = 6.25% 76 = 5%

5	(a)	cf graph through (40, 5), (60, 25), (80, 35), (100, 38) and (120, 40)	C2	for a complete and accurate cf graph	May be a cumulative frequency curve or a cumulative frequency polygon Ignore any graph drawn to the left of the first point If histograms drawn, plots must be identified
			(C1	for at least 4 or 5 cf values plotted correctly)	
				SC: B1 for 4 or 5 points plotted not at end but consistently within each interval and joined provided no gradient is negative	
	(b)	answer in range 21 to 28	M1 A1	for UQ in the range 66 to 70 or LQ in the range 42 to 46 or ft their cf graph for answer in range 21 to 28 or ft their cf graph	
	(c)	answer in the range $\frac{19}{40}$ to $\frac{24}{40}$	M1	for finding the difference between readings taken from the cf axis at points from a mark of 50 and a mark of 90 or ft their graph (if possible)	Their graph must be a cf graph
			A1	for an answer in the range $\frac{19}{40}$ to $\frac{24}{40}$ or ft their cf graph	Accept any equivalent fraction, decimal from 0.475 to 0.6 or percentage from 47.5% – 60%

_	(a)	5,15,35,55,70,80	B1	cao		-
6	(b)	Graph drawn	M1 A1	for 5 or 6 of their points plotted correctly for a fully correct graph SC B1 if 5 or 6 of their points plotted not and joined by a curve or line segments pr	Ignore to the left of the first point and right of the last point If histograms drawn, points must be identified Accept a smooth curve or line segments	
	(c)	Correct decision and correct figures	M1	for 60 ÷ 100 × 80 (=48) oe	reading value from graph at wage = 360 (=40) or for $35 + \frac{1}{5} \times 20$ (=39)	ft from a cum freq graph
			M1	reading value from graph at cf = 48 (=380)	for "40" ÷ 80 × 100 (=50(%)) or for 60 ÷ 100 × 80 (=48)	
			C1	ft for correct decision and correct figures, eg No with 48 and "380" or with "40" an		

7	(a)	cf graph	M1	for 5 or 6 points plotted correctly	If histograms drawn, points must be identified
			A1	for a fully correct graph SC B1 if 5 or 6 of their points plotted not at the end but consistent within each interval and joined by a curve or line segments providing no gradient is negative	Accept a smooth curve or line segments Ignore to the left of the first point and right of the last point
	(b)	13 to 14	В1	for answer in the range 13 to 14 or ft their cf graph	ft only from a cf graph