Question Number	Scheme	Marks
6.(a)	Mean, median, average, marks, results score: on P2 (y) is lower than P1(x) o.e. Spread , dispersion, range, st. dev, var(iance) : on P2 is more than P1 o.e	B1 B1 (2)
(b)(i)	e.g. (38, 0) doesn't follow the pattern/trend <u>or</u> out of range of other points or far from (best fit) line / other points (o.e.)	B1
(ii)	The student was absent when paper 2 was taken (o.e.)	B1 (2)
(c)	New $\bar{x} = \dfrac{35.75\times16-38}{15}$ <u>or</u> $\dfrac{534}{15}$, = **<u>35.6</u>**	M1, A1
	New $\bar{y} = \dfrac{25.75\times16}{15} = 27.4\dot{6}$ awrt **<u>27.5</u>** (allow $\dfrac{412}{15}$)	B1 (3)
(d)(i)	New $\sum xy = 15\,837 - 38\times0$ so no change	B1
(ii)	$S_{xy} = 15\,837 - \dfrac{(35.75\times16-38)\times(25.75\times16)}{15}$ <u>or</u> $-\dfrac{"534"\times"412"}{15}$ <u>or</u> $-\dfrac{220008}{15}$	M1
	= <u>1169.8</u> (*)	A1cso (3)
(e)	$r = \dfrac{1169.8}{\sqrt{965.6\times1561.7}}$, = 0.9526079… awrt **<u>0.953</u>**	M1, A1 (2)
(f)	$b = \dfrac{1169.8}{965.6}$ [= 1.21147…], a = "27.5" – "b"×"35.6" [= – 15.6618..]	M1, M1
	<u>y = – 15.6/7 + 1.2x</u> b = awrt **<u>1.2</u>**, a = awrt **<u>– 15.6 or – 15.7</u>**	A1, A1 (4)
(g)	(Value of r increased from 0.746 to 0.953) so <u>points</u> lie <u>closer to</u> a st. <u>line</u>	B1 (1)
(h)	y = "1.21..."×38 – "15.66..." <u>or</u> awrt **<u>30</u>**	B1ft (1)
		[18 marks]

	Notes
(a)	for a correct comment on 1st B1: mean etc 2nd B1: spread etc, one of these 5 terms seen
(b)	1st B1 for a suitable explanation (saying an "extreme point" is B0) 2nd B1 for a suitable comment e.g. teacher didn't mark it, wrongly recorded/plotted (o.e.)
(c)	M1 for a correct method to find $\bar{x}$ (a list requires Σx = 534 and ÷15 or correct ans) A1 for 35.6 or e.g. $35\frac{3}{5}$ B1 for awrt 27.5
(d)(i)	B1 for explanation with sight of "38×0" (o.e.) e.g. for (38, 0) <u>or</u> omitted point, xy = 0
(ii)	M1 for a correct expression (can ft their 534 and their 412 if they are stated in (c)) A1cso dependent on M1 with no incorrect working seen. [May be seen in (e)]
(e)	M1 for a correct method (implied by ans = awrt 0.95) A1 for awrt 0.953
(f)	1st M1 for a correct expression for b 2nd M1 for a correct expr' seen for a (ft means in (c)) 1st A1 for b = awrt 1.2 2nd A1 for a = awrt – 15.6 or – 15.7 <u>a and b must be in an x, y eq'n</u>
(g)	B1 for a suitable comment e.g. <u>linear</u> relationship <u>stronger</u> **or** <u>stronger linear</u> correlation
(h)	B1ft for awrt 30 or ft expression using x = 38 in their equation (need not be evaluated)

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