

Question	Scheme	Marks	AOs
7(a)	Uses or implies that $P = an + b$	B1	3.3
	$a = \frac{65 - 24}{20} = 2.05$	M1	3.1b
	e.g. $24 = 10 \times "2.05" + b \Rightarrow b = \dots$	M1	1.1b
	$P = 2.05n + 3.5$	A1	2.2a
		(4)	
(b)	$P = 2.05 \times 40 + 3.5 = 85.5$	M1	3.4
	85 500	A1	3.2a
		(2)	
(c)	$85500 \approx 85000$ so this is a good model	B1ft	3.5a
		(1)	

(7 marks)

Notes

(a)

B1: Uses or implies that $P = an + b$ (may use other letters for a and b)

M1: Attempts to find a by finding the gradient between (10, 24) and (30, 65). Score for the expression $\frac{65 - 24}{20}$.

Alternatively, forms two simultaneous equations $24 = 10a + b$ and $65 = 30a + b$ and solves to find a or b condoning arithmetical slips.

Condone the use of 24 000 and 65 000 which can score maximum B1M1M1A0

M1: Uses their value for a , substitutes into $P = an + b$ with either (10, 24) or (30, 65) and proceeds to find a value for b . The coordinates must be substituted into the equation the correct way round.

Alternatively, using simultaneous equations, proceeds to find a value for a and for b , condoning arithmetical slips.

A1: $P = 2.05n + 3.5$

(b)

M1: Substitutes $n = 40$ into their equation found in (a) to find a value for P

A1: 85 500 o.e. (which may have come from $P = 2050n + 3500$)

(c)

B1ft: States that it is a good model because 85 500 is approximately equal to 85 000. Follow through on their answer to (b) provided the value is close to 85 000 (allow values between 80 000 and 90 000). Allow comparison of 85.5 and 85. Must conclude this is a good model.