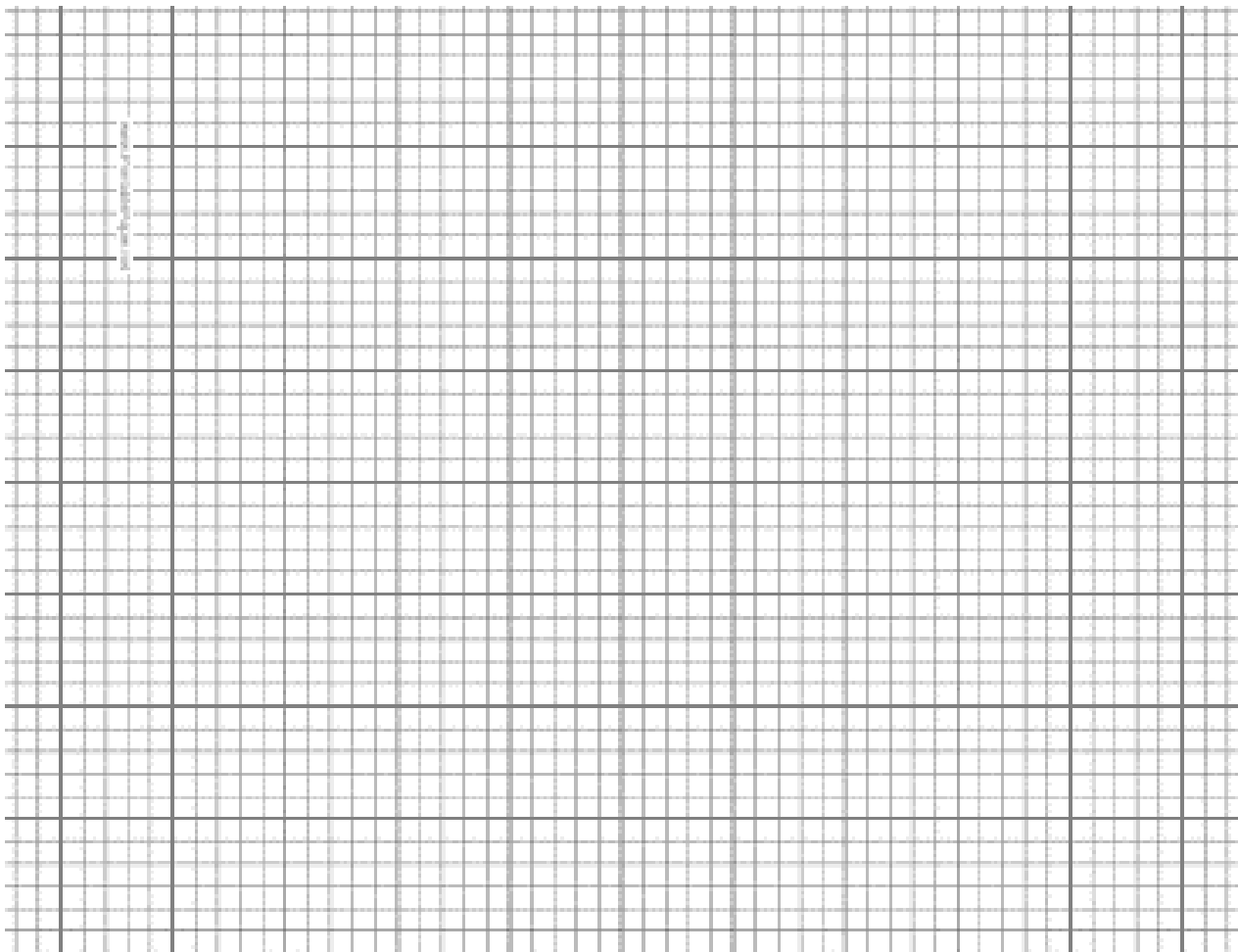




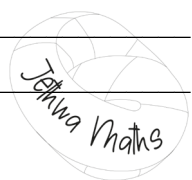
1. A student is investigating the relationship between the price ( $y$  pence) of 100 g of chocolate and the percentage ( $x$  %) of cocoa solids in the chocolate. The data obtained is shown in the table,

Chocolate Brand	$x$ (% cocoa)	$y$ (pence)
A	10	35
B	20	55
C	30	40
D	35	100
E	40	60
F	50	90
G	60	110
H	70	130

- a. Draw a scatter diagram to represent his data. (2)  
The equation of the regression line of  $y$  on  $x$  is  $y = 17 + 1.54x$
- b. Draw the regression line on your diagram (2)  
The student believes that one brand of chocolate is overpriced and uses the regression line to suggest a fair price for this brand.
- c. Suggest, with a reason, which brand is overpriced. (1)
- d. Comment on the validity of the student's method for suggesting a fair price. (1)

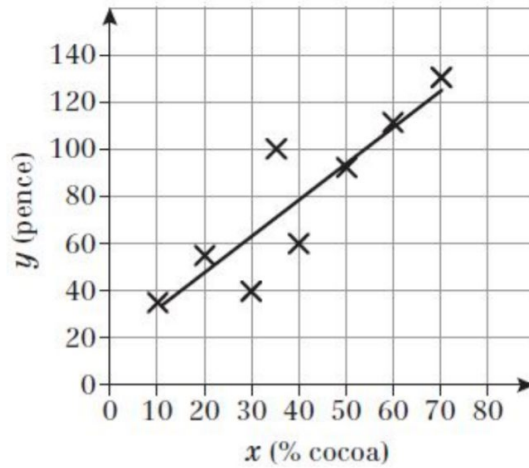


Lined writing area consisting of 30 horizontal lines.



## Solutions

1a/b.



Scale which covers at least 50% of the graph	<b>M1</b>
All points correctly plotted	<b>M1</b>
Line of best fit	<b>M1</b>

1c.

Band D is overpriced, since its price is much more than you would expect (the data point is far above the regression line).	<b>M1</b>
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1d.

The regression equation should be used to predict a value for y given x, i.e. the price given the percentage of cocoa solids. So, the student's method is a valid one.	<b>M1</b>
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