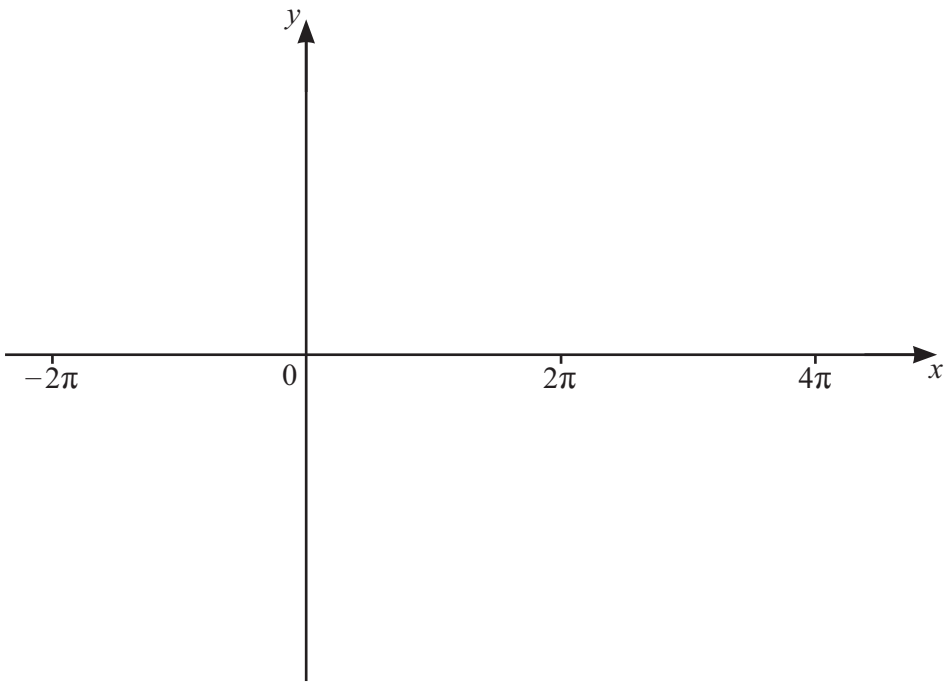
5 In this question, all angles are in radians.

(a) Write down the period of $5\tan\left(\frac{x}{4}\right)+1$. [1]

(b) On the axes, sketch the graph of $y = 5\tan\left(\frac{x}{4}\right)+1$ for $-2\pi \leqslant x \leqslant 4\pi$.

State the intercept with the y-axis.
Show clearly the positions of any asymptotes. [3]



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6 **(a)** Five of the digits 1 2 3 4 5 6 7 8 9 are used to make a 5-digit number.

Find how many ways this can be done when the 5-digit number is greater than 50 000. [2]

(b) In a group of 13 people, 7 have red hair and 6 have brown hair.

(i) The 13 people stand in line for a photograph.
No person with red hair is standing next to another person with red hair.

Find the number of different ways this can be done. [2]

(ii) Chris chooses 5 people from this group.

Find the number of ways Chris can do this if at least 1 person chosen has brown hair. [2]

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