MATH*1200 – LAB #2: THE BAT MAN

www.nathanieljohnston.com/math1200/lab2.pdf
Solution: www.nathanieljohnston.com/math1200/lab2_solution.pdf

The Joker has robbed a bank and is trying to escape in a white van. After x seconds, the van has travelled x metres (it's a slow van).

Batman, trying to catch the Joker, hops into the Batmobile and chases after the white van. However, he doesn't get moving until 2 seconds after the Joker, and his position after x seconds is given by $\sqrt{x^2+6x-16}$.

For the following two questions, ignore the length of the vehicles and anything you have learned in physics class.

1. Does Batman ever catch up to the Joker? If so, at what time x? If not, find how close he gets to the Joker as $x \to \infty$.
2. Assume now that Batman was a little bit slower – instead of taking off 2 seconds after the Joker, he takes off 8 seconds after the Joker and his position after x seconds is now given by $\sqrt{x^2-6x-16}$. Does he ever catch up to the Joker? If so, at what time x? If not, find how close he gets to the Joker as $x \to \infty$.

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