

Maths With Zombies

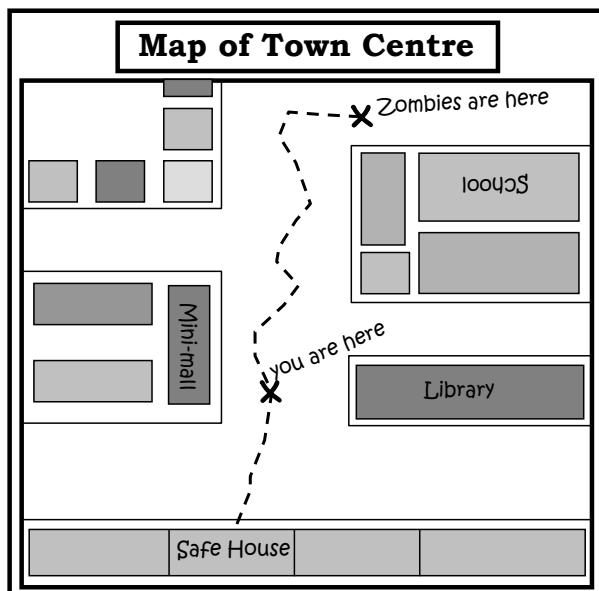
...because everything's better with zombies!

<http://MathsWithZombies.wordpress.com>

6. The Injured Friend Problem

You can see the zombies coming towards you. You estimate that they're moving at about 4 miles an hour. Normally you'd be able to out run them no problem but today your carrying your best friend who's just broken his leg and can't walk. This means you can only move at 1 miles an hour (he might be your friend but he's heavy!). You can see the door to your safe house at the end of the street. It's 83 yards away. You look back over your shoulder, the zombies are 250 yards behind you. You have two options: You can carry on with your friend but he'll slow you down or you can abandon him so you can move faster. Will you still make it to your safe house before the zombies get there? (**Hint:** There's 1,760 yards in a mile.)

- A. Yes, so the best thing to do is keep carrying your friend.
- B. No, so the only way you'll survive is if you abandon your friend so you can run fast enough to get away (after all it's better if one of you survives rather than you both dying).



What answer did you get?

A: You got it right. You'll arrive at the safe house just half a second before the zombies. Just as well you didn't get it wrong and accidentally go for B.

B: Oh no! You got your maths wrong and now your friends being eaten alive by zombies when you could have made it even without abandoning him. You did get the maths wrong didn't you? You didn't just abandon him, did you? Humm, I'm not too sure I trust you any more ...

How to work it out: First, the zombies to reach the safe house: They can travel at 4 miles an hour, that's 7,040 yards ($4 * 1760$ or the number of yards in a mile). This means they will cover the 333 yards to the safe house (the 83 yards between you and the safe house plus the 200 yards between you and the zombies) in 0.0473 hours. This is worked out by dividing the distance they need to cover (283 yards) by the distance they can travel in an hour (7,040 yards). 0.0473 hours is the equivalent of 2 minutes and 50.3 seconds. You've only got 83 yards to cover but you're moving much slower. You can only cover one mile or 1,760 yards in an hour. You will take 0.0472 hours ($83/1,760$) to reach the safe house. That's 2 minutes and 49.8 second meaning you'll reach safety with just a hair over half a second. If you'd been just one more yard further from the safe house, they'd have got you.