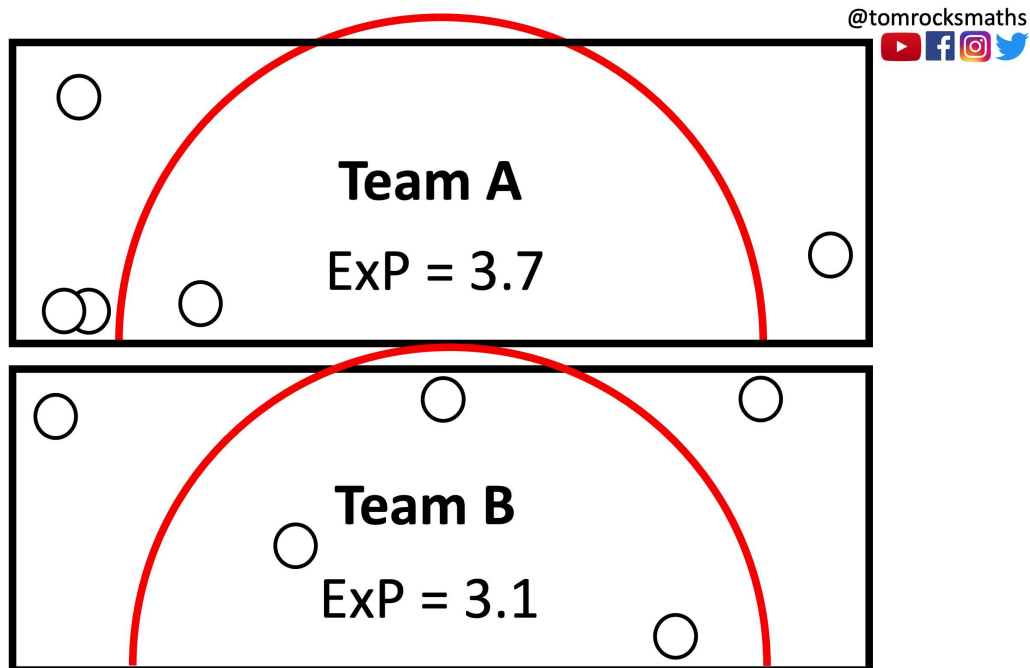


SOLUTION



1. Based on the content discussed in the lecture, which team would you expect to win?

If we draw the diving range, we can see that Team A aimed 4 shots in the unsaveable zone, while Team B only aimed 2 shots there. Each shot in the unsaveable zone has an 80% chance of scoring, while each shot in the diving range only has a 50% chance of scoring. As Team A has more shots in the unsaveable zone, we would expect Team A to win.

2. Can you calculate the 'expected number of penalties' that each team will score based on the placements shown?

To work out the expected number of penalties scored, we look at the expected number of penalties scored in each region and then add them together. The expected penalties scored in a region will be:

(probability of scoring in that region) × (number of shots in that region)

Team A has 4 shots in the unsaveable zone and 1 in the diving range. Team B has 2 shots in the unsaveable zone and 3 in the diving range. The expected number of penalties scored for each team is:

[(probability of scoring in diving range) × (number of shots in diving range)]
+ [(probability of scoring in unsaveable zone) × (number of shots in unsaveable zone)]

Team A:
= [0.5 × 1] + [0.8 × 4]
= 0.5 + 3.2
= 3.7

Team B:
= [0.5 × 3] + [0.8 × 2]
= 1.5 + 1.6
= 3.1