

# Quiz 7

Form A

Name \_\_\_\_\_

Math 130B, 5 PM

Please justify all your answers

May 18, 2022

Please also write your full name on the back

A mouse is placed in an enclosure with three tunnels. The first tunnel is 50cm long and it leads to the exit. The second tunnel is 30cm long and loops back into the enclosure. The third tunnel is 40cm long and also loops back into the enclosure. Suppose the mouse always travels through tunnels 1, 2 and 3 with respective probabilities  $1/4$ ,  $1/4$ ,  $1/2$  (each choice is independent of the others).

1. Draw a diagram that depicts the mouse's possible choices and their probabilities.

2. What is the expected distance that the mouse travels before it escapes?

# Quiz 7

Form B

Name \_\_\_\_\_

Math 130B, 6 PM

Please justify all your answers

May 18, 2022

Please also write your full name on the back

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