Name: Solutions

Date: 2/13/2025

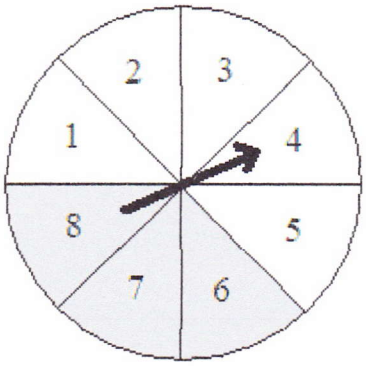
Math 130
Quiz 4

1. (1, 1, 1, 1, 1, 3, 1, 1 points) Consider the experiment where you spin the spinner shown below:

$A = \{1, 3, 5, 7\}$

$B = \{6, 7, 8\}$

$C = \{1, 2, 3, 4, 5, 6\}$



Let A denote the event that the spinner lands on an odd number, let B be the event that the spinner lands on a shaded part of the circle, and let C be the event that the spinner lands on a number less than 7.

a) Find $A \cup B$

$= \{1, 3, 5, 6, 7, 8\}$

b) Find $B \cap C$

$= \{6\}$

c) Find $\overline{B}$

$= \{1, 2, 3, 4, 5\}$

d) Are the events A and B disjoint? Why or why not?

No, because 7 is in both events

(this is a continuation of problem 1)

e) Find the probability that the spinner lands on a number less than 7 (write your answer as a percentage)

$P(C) = \frac{|C|}{|S|} = \frac{6}{8} = 75\%$

f) What does the probability in part (e) mean?

If you spin the spinner many times, it will land on a number less than 7 about 75 % of the time.

g) If you spin the spinner 20,000 times, how many times will the spinner land on a number less than 7?

$(0.75)(20{,}000) = 15{,}000$

About 15,000 times

h) If you spin the spinner infinitely many times, what percentage of the time will the spinner land on a number less than 7?

Exactly 75 % of the time.