quizz 9, ME 240 Dynamics, Fall 2017

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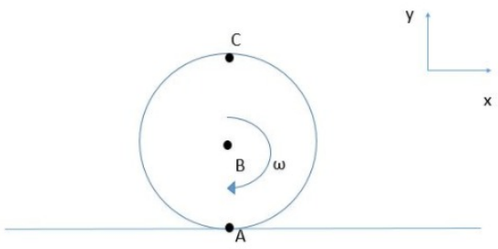


Use the above figure for all of the questions below. The radius of the wheel is r. Note that point A is attached to the bottom of the wheel, point B is at the center, and point C is at the top.

0.1 Problem 1

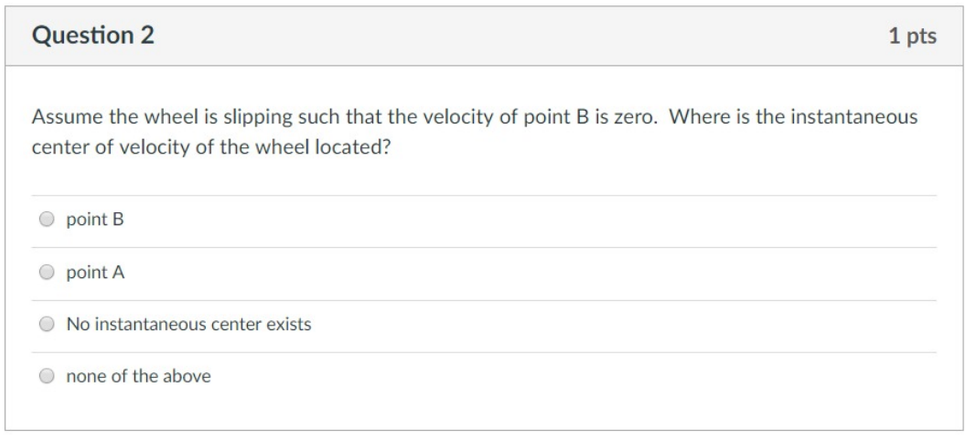
Question 1 1 pts

Assume the wheel is traveling to the right and rolling without slip. What is the velocity at point C?

- $2r\omega$
- $r\omega^2$
- $r\omega$
- not enough information

$2r\omega$

0.2 Problem 2



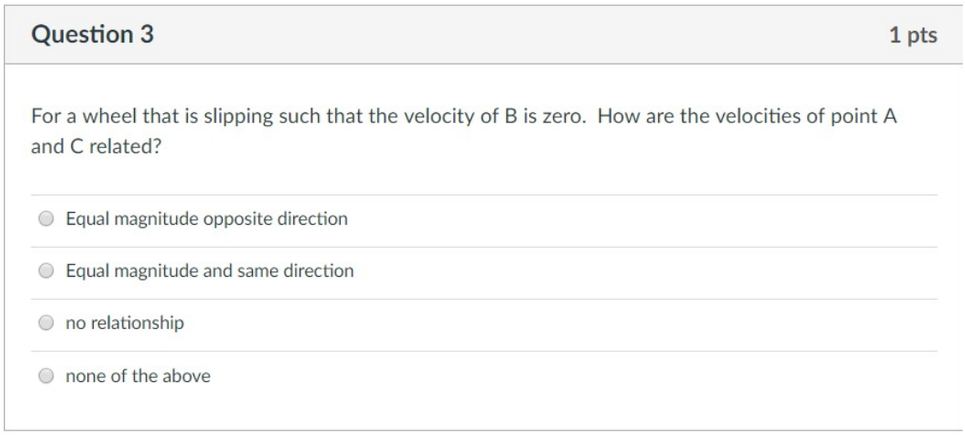
Question 2 — 1 pts

Assume the wheel is slipping such that the velocity of point B is zero. Where is the instantaneous center of velocity of the wheel located?

- point B
- point A
- No instantaneous center exists
- none of the above

Point B

0.3 Problem 3



Question 3 — 1 pts

For a wheel that is slipping such that the velocity of B is zero. How are the velocities of point A and C related?

- Equal magnitude opposite direction
- Equal magnitude and same direction
- no relationship
- none of the above

Equal and opposit

0.4 Problem 4

Question 4 1 pts

Assume the wheel is traveling to the right and rolling **with** slip. The angular velocity of the wheel points in direction shown in the figure.

Where is the instantaneous center of velocity for the wheel located?

- ○ Between points A and B
- ○ Point A
- ○ Point B
- ○ Point C
- ○ Not enough information

Between A and B