

Draw a picture, list your given information and unknowns for each problems

1) & 2) Online

3) A child sits on a carousel at a distance of _____ m from the center and rotates through an arc length of _____ m. What is the angular displacement of the child?

Drawing Given Info Formula Set-Up with Units

Answer _____

4) A grinding wheel initially at rest with a radius of _____ m rotates until it reaches an angular speed of _____ rad/s in _____ s. What is the wheel's average angular acceleration?

Drawing Given Info Formula Set-Up with Units

Answer _____

5) A Ferris wheel initially at rest accelerates to a final angular speed of _____ rad/s and rotates through an angular displacement of _____ rad. What is the Ferris wheel's average angular acceleration?

Drawing Given Info Formula Set-Up with Units

Answer _____

6) Fill in the unknown quantities in the follow table. Place the formula and Set-up on the line.

Given Info	Formula	Set-Up with Units
a) _____	_____	_____
b) _____	_____	_____
c) _____	_____	_____
d) _____	_____	_____

7) Fill in the unknown quantities in the follow table. Place the formula and Set-up on the line.

Given Info	Formula	Set-Up with Units
a) _____	_____	_____
b) _____	_____	_____
c) _____	_____	_____
d) _____	_____	_____

8) Fill in the unknown quantities in the follow table. Place the formula and Set-up on the line.

Given Info	Formula	Set-Up with Units
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- a) _____
- b) _____
- c) _____
- d) _____

9) The **diameter of the outermost planet, Pluto**, is _____ **km**. If a space probe were to orbit Pluto **near the planet's surface**, what would be the **arc length of the probe's displacement** after it had completed _____ **orbits**?

Drawing	Given Info	Formula	Set-Up with Units
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Answer _____

10) The smallest rideable tandem bicycle was built in France and had a length of less than _____ **cm**. Suppose this bicycle is **accelerated from rest** so that the angular acceleration of the wheels is _____ **rad/s²**. **What is the angular speed of the wheels after _____ s?**

Drawing	Given Info	Formula	Set-Up with Units
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Answer _____

11) The most massive car ever built was the official car of the General Secretary of the Communist Party in the former Soviet Union. The car had a mass of _____ **kg**. Suppose this car is moving down a _____ **°** slope when the driver applies the brakes. The wheels stop rotating, and the car slides, decelerating at a rate of _____ **m/s²**.

a) Calculate the force of kinetic friction acting the car as it slows.

Drawing	Given Info	Formula	Set-Up with Units
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Answer _____

b) Determine the value of the coefficient of kinetic friction.

Given Info	Formula	Set-Up with Units
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Answer _____