

Bike Crank - Pre-Analysis & Start-Up

Author: Rajesh Bhaskaran, Cornell University

Problem Specification

1. Pre-Analysis & Start-Up

2. Geometry

3. Mesh

4. Physics Setup

5. Numerical Solution

6. Numerical Results

7. Verification & Validation

Exercises

Comments

Pre-Analysis & Start-Up

Pre-Analysis

In the pre-analysis step, we review the:

- Mathematical model
- Numerical solution strategy
- Hand calculations of expected results

Governing Equations

Additional Equations

Traction at the Boundary

Boundary Conditions

Numerical Solution Strategy

Hand Calculations

Check Your Understanding

Which one of the following assumptions is contained in the *strain-displacement* relations in the mathematical model that we will solve using ANSYS? (See [e dX module](#) for answer)

- Acceleration at any point in the structure is zero
- Material is in the elastic range
- Material is isotropic
- Strains are small
- All of the above

[Go to Step 2: Geometry](#)

[Go to all ANSYS Learning Modules](#)