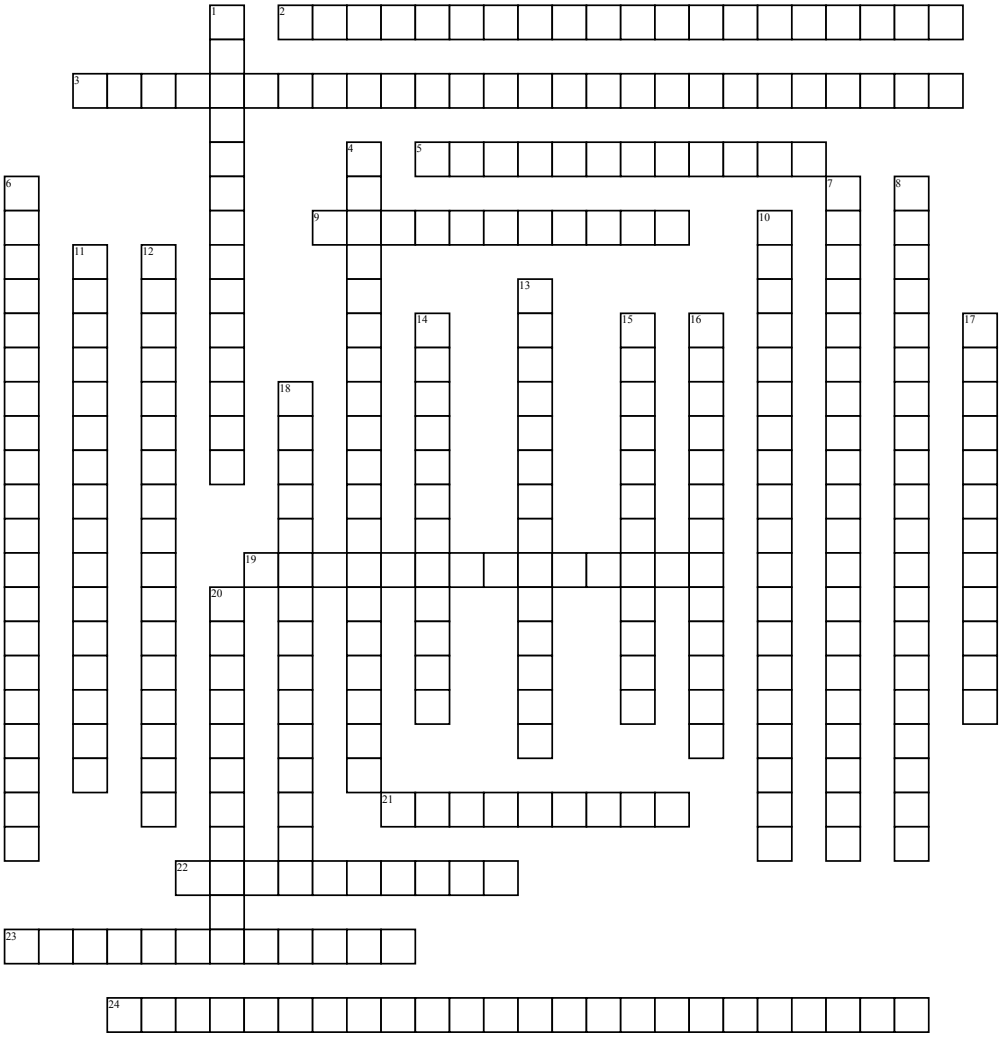
Name: _____ Date: _____

Mechanics of Materials Crossword



Across

2. Helps determine the values of moments

3. Bending occurring at the middle of the beam

5. For a shaft under torsional loading, the angle through which fixed end of a shaft rotates with respect to the free end

9. cross section of a beam or shaft along which there are no longitudinal stresses or strains.

19. is the maximum value of stress that a material can resist

21. $\sigma = E^* \varepsilon$

22. Deformation

23. the change in length along the x-axis divided by the original length

24. horizontal shear force in the middle of beam

Down

1. the ratio of the proportional decrease in a lateral measurement to the proportional increase in length in a sample of material that is elastically stretched.

4. Also known as 2nd moment of area

6. $\tau = Tc/J$

7. also known as second polar moment of area

8. Orientation (θp)

10. It is the slope of initial linear part of the stress-strain curve

11. The ability to deform before rupture, normally characterized by a large plastic region.

12. is the elasticity coefficient for shearing or torsion force.

13. Is the ratio of the stress that causes failure to the applied stress.

14. Helps determine the value of shear force

15. Go over 2% in stress vs strain graph

16. commonly known as strength

17. $\sigma = P/A$

18. The inability to deform before rupture

20. is a measure of the axial force acting on a beam quantitatively measuring the internal forces acting within in the beam.

Word Bank

TORSIONAL SHEAR STRESS
BENDING MOMENT DIAGRAM
AXIAL STRESS
ULTIMATE STRESS
POISSON'S RATIO
NEUTRAL AXIS
DUCTILE MATERIALS
NORMAL STRAIN
ANGLE OF TWIST
BENDING STRESS AT NEUTRAL AXIS
SHEAR DIAGRAM
MAJOR PRINCIPAL STRESS
FAILURE STRESS
AREA MOMENT OF INERTIA
NORMAL STRESS
SHEAR STRESS AT NEUTRAL AXIS
FACTOR OF SAFETY
HOOKES LAW
POLAR MOMENT OF INERTIA
OFFSET METHOD
MODULUS OF RIGIDITY
DEFLECTION
MODULUS OF ELASTICITY
BRITTLE MATERIAL