

Robotics Assessment

YET Program – Pre-Test

Name: _____

Grade: _____

School: _____

Age: _____

Years in YET Program: _____

Math and Science Knowledge

Directions: *Carefully read the following questions and indicate which answer you believe is most accurate.*

- ___1. What is Force?
 - a. A skill that astronauts use to help them deal with weightlessness.
 - b. It causes something with mass to move.
 - c. A way of making steel harder for tools.
 - d. A computer component that keeps the processor cool so it won't over heat.

- ___2. What force do you deal with everyday?
 - a. Gravity
 - b. Opening doors
 - c. Sleeping
 - d. Riding in a car

- ___3. What is Torque?
 - a. A gear used to make the robot go faster.
 - b. A bolt used to construct robots.
 - c. A wrench.
 - d. A rotational force.

- ___4. Name 2 units of power.
 - a. Horsepower and Watts
 - b. Battery and RPM
 - c. Watts and RPM
 - d. Volts and electricity

- ___5. What is Friction?
 - a. A disagreement between 2 people.
 - b. A book based on a fantasy.
 - c. Friction is caused by 2 surfaces rubbing together.
 - d. Is a term for the surface that a car drives on.

- ___6. If a wheel makes 2 revolutions per 10 seconds, how many revolutions will that wheel make in one minute?
 - a. 2
 - b. 12
 - c. 6
 - d. 20

- ___7. What is Center of Gravity?
 - a. The single point on an object where all of its weight is assumed to be located.
 - b. The middle of a wheel attached to the Robot.
 - c. The total mass of an object while it is standing still.
 - d. The point at which an object falls over because it is unbalanced.

10/4/05

Perkins, Radhakrishna, Hoy (2005)

- ___8. What is Gear Ratio?
- The type of gear used to drive a something forward.
 - The number of gears used to make the axle work for the robot.
 - The ratio of the number of teeth on one gear to the number of teeth on another gear.
 - The way gears are used together to make something work.
- ___9. What is the Gear Ratio of a 40 tooth gear to a 8 tooth gear?
- 1 to 2
 - 5 to 1
 - 4 to 8
 - 10 to 3
- ___10. What is a Radius?
- The distance from the center of the circle to the outer ring.
 - The distance all the way around the circle.
 - The distance half way around the circle.
 - The distance across the circle through the center.
- ___11. What is a Diameter?
- The distance from the center of the circle to the outer ring.
 - The distance all the way around the circle.
 - The distance half way around the circle.
 - The distance across the circle through the center.
- ___12. What is a Circumference?
- The distance from the center of the circle to the outer ring.
 - The distance all the way around the circle.
 - The distance half way around the circle.
 - The distance across the circle through the center.

Robotics Assessment

YET Program – Post Test

Name: _____

Grade: _____

School: _____

Age: _____

Year in YET Program: _____

Math and Science Knowledge

Directions: Carefully read the following questions and indicate which answer you believe is most accurate.

- ___ 13. What is Force?
- A skill that astronauts use to help them deal with weightlessness.
 - It causes something with mass to move.
 - A way of making steel harder for tools.
 - A computer component that keeps the processor cool so it won't over heat.
- ___ 14. What force do you deal with everyday?
- Gravity
 - Opening doors
 - Sleeping
 - Riding in a car
- ___ 15. What is Torque?
- A gear used to make the robot go faster.
 - A bolt used to construct robots.
 - A wrench.
 - A rotational force.
- ___ 16. Name 2 units of power.
- Horsepower and Watts
 - Battery and RPM
 - Watts and RPM
 - Volts and electricity
- ___ 17. What is Friction?
- A disagreement between 2 people.
 - A book based on a fantasy.
 - Friction is caused by 2 surfaces rubbing together.
 - Is a term for the surface that a car drives on.
- ___ 18. If a wheel makes 2 revolutions per 10 seconds, how many revolutions will that wheel make in one minute?
- 2
 - 12
 - 6
 - 20
- ___ 19. What is Center of Gravity?
- The single point on an object where all of its weight is assumed to be located.
 - The middle of a wheel attached to the Robot.
 - The total mass of an object while it is standing still.
 - The point at which an object falls over because it is unbalanced.

10/4/05

Perkins, Radhakrishna, Hoy (2005)

- ___20. What is Gear Ratio?
- The type of gear used to drive a something forward.
 - The number of gears used to make the axle work for the robot.
 - The ratio of the number of teeth on one gear to the number of teeth on another gear.
 - The way gears are used together to make something work.
- ___21. What is the Gear Ratio of a 40 tooth gear to a 8 tooth gear?
- 1 to 2
 - 5 to 1
 - 4 to 8
 - 10 to 3
- ___22. What is a Radius?
- The distance from the center of the circle to the outer ring.
 - The distance all the way around the circle.
 - The distance half way around the circle.
 - The distance across the circle through the center.
- ___23. What is a Diameter?
- The distance from the center of the circle to the outer ring.
 - The distance all the way around the circle.
 - The distance half way around the circle.
 - The distance across the circle through the center.
- ___24. What is a Circumference?
- The distance from the center of the circle to the outer ring.
 - The distance all the way around the circle.
 - The distance half way around the circle.
 - The distance across the circle through the center.