

**2014 John O'Bryan Mathematical Competition**  
**Freshman-Sophomore Individual Test**

**Directions:** Please answer all questions on the answer sheet provided. All answers must be written legibly in the correct blanks on the answer sheet and in simplest form. **Exact** answers are to be given unless otherwise specified in the question. No units of measurement are required. Each problem has the same point-value.

member selected is an irrational number. Give your answer as a fully reduced fraction.

2. If  $x = 2.8$ , find the value of  $(3x + 7.6)^{-0.75}$ . Give your answer as a fully reduced fraction.

of each type). If the coins have a total value of \$5.10, find the maximum number of nickels the man can

Name: \_\_\_\_\_

Team Code: \_\_\_\_\_

**2014 John O'Bryan Mathematical Competition  
Freshman/Sophomore Individual Test**

**Note: All answers must be written legibly in the correct blanks on the answer sheet and in simplest form. Exact answers are to be given unless otherwise specified in the question. No units of measurement**

1. \_\_\_\_\_

11. \_\_\_\_\_

2. \_\_\_\_\_

12. \_\_\_\_\_

3. \_\_\_\_\_

13. \_\_\_\_\_

4. \_\_\_\_\_

14. \_\_\_\_\_

5. \_\_\_\_\_

15. \_\_\_\_\_

6. \_\_\_\_\_

16. \_\_\_\_\_

Name: ANSWERS

Team Code:

**2014 John O'Bryan Mathematical Competition  
Freshman-Sophomore Individual Test**

Note: All answers must be written legibly and in simplest form. Exact answers are to be given unless