

### Junior-Senior Individual Test

**Directions:** Please answer all questions on the answer sheet provided. All answers must be written legibly 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; however ties for individual awards will be broken based on problem difficulty (#11-20 are considered more difficult and will be used to break ties).

1. If  $x^2 + 4x + 4 = 0$ , find the largest possible value of  $x$ .  $3 + 107 = 110$

there is at least one person from each party on the committee? Express your answer as a fraction reduced to lowest terms.

12. A circle has the line  $x - 2y + 4 = 0$  tangent at the point  $(0, 2)$  and  $y = 2x - 7$  tangent at  $(3, -1)$ . Find the

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

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

2011-12-02 11:00 AM

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