

**Directions:** Select the letter of the correct answer for each question below.

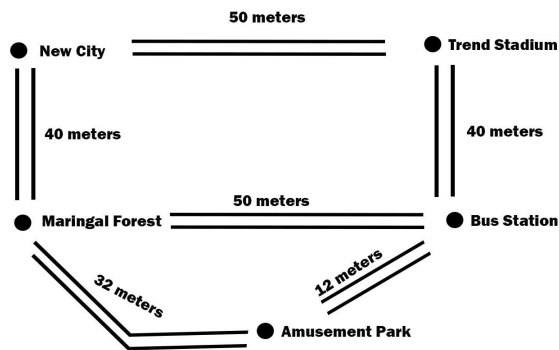
1) Determine the area of a square with a diagonal which is  $5\sqrt{2}$  cm long.

- (a)  $20 \text{ cm}^2$
- (b)  $25 \text{ cm}^2$
- (c)  $50 \text{ cm}^2$
- (d)  $100 \text{ cm}^2$

2) The legs of a right triangle have measurements of 6 cm and 8 cm. Determine the length of the hypotenuse.

- (a) 10 cm
- (b) 12 cm
- (c) 9 cm
- (d) 18 cm

For item 3, refer to the figure below:



3) Determine the distance of the shortest path from Trend Stadium to Maringal Forest.

- (a)  $10\sqrt{41}$  meters

- (b)  $12\sqrt{41}$  meters
- (c)  $11\sqrt{41}$  meters
- (d) The given information in the problem is insufficient so the problem cannot be solved
- 4) Suppose that  $m$ ,  $n$ , and  $p$  are positive whole numbers such that  $m^2 + n^2 = p^2$ . Which of the following is/are TRUE?
- $m$ ,  $n$ , and  $p$  are Pythagorean triples
  - The smallest possible values of  $m$ ,  $n$ , and  $p$  are 3, 4, and 5 respectively.
  - $p$  is the largest number among  $m$  and  $n$
  - 15, 20, and 25 are possible values of  $m$ ,  $n$ , and  $p$  respectively
- (a) I and III only
- (b) I, III, and IV only
- (c) I, II, and III only
- (d) I, II, III, and IV are true
- 5) The shorter leg of a  $30^\circ - 60^\circ - 90^\circ$  right triangle is 2 meters long. Determine the length of the longer leg.
- 4 meters
  - $2\sqrt{2}$  meters
  - $2\sqrt{3}$  meters
  - 1 meter