

## Worksheet: Motion in a Plane

Maharashtra State Board · Class 11 · Physics · 5 questions · 15 marks

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

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 15

**Q1.** A vector has components  $A_x = 3$ ,  $A_y = 4$ . Find its magnitude and direction. [2 marks]

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**Q2.** What are  $i \cdot j$  and  $i \times j$ ? [2 marks]

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**Q3.** A projectile is fired at 50 m/s at 30 degrees to the horizontal. Find T, H, and R ( $g = 10 \text{ m/s}^2$ ). [5 marks]

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**Q4.** A stone is thrown horizontally at 20 m/s from 80 m height. Find its range ( $g = 10 \text{ m/s}^2$ ). [3 marks]

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**Q5.** A particle moves in a circle of radius 20 cm at 5 revolutions per second. Find its speed and centripetal acceleration. [3 marks]

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