

Name \_\_\_\_\_ ID \_\_\_\_\_

MATH 251

Quiz 1

Spring 2007

Sections 509

P. Yasskin

1-4	/20
5	/ 5
Total	/25

Multiple Choice & Work Out: (5 points each)

1. Find the equation of the sphere with center at  $(4,3,2)$  which passes through the point  $(2,4,0)$ .

- a.  $(x+4)^2 + (y+3)^2 + (z+2)^2 = \sqrt{3}$
- b.  $(x-4)^2 + (y-3)^2 + (z-2)^2 = 3$
- c.  $(x-4)^2 + (y+3)^2 + (z-2)^2 = 3$
- d.  $(x-4)^2 + (y-3)^2 + (z-2)^2 = 9$
- e.  $(x+4)^2 + (y-3)^2 + (z+2)^2 = 9$

2. If  $\vec{u}$  points South East and  $\vec{v}$  points Down, then  $\vec{u} \times \vec{v}$  points

- a. South West
- b. South East
- c. Up
- d. North West
- e. North East

3. A wagon is pulled horizontally from the origin  $(0,0)$  to the point  $(4,0)$  meters by the force  $\vec{F} = (2,1)$  Newtons. Find the work done.

- a. 8 Joules
- b. 4 Joules
- c.  $4\sqrt{5}$  Joules
- d. 12 Joules
- e.  $\frac{4}{\sqrt{5}}$  Joules

4. A triangle has vertices  $P = (2, 1, 3)$ ,  $Q = (2, 4, 0)$ , and  $R = (4, 1, 1)$ . Find the angle at  $P$ .

- a.  $30^\circ$
- b.  $60^\circ$
- c.  $90^\circ$
- d.  $120^\circ$
- e.  $150^\circ$

5. A triangle has vertices  $P = (2, 1, 3)$ ,  $Q = (2, 4, 0)$ , and  $R = (4, 1, 1)$ . Find the area of the triangle. Solve this on the back of the Scantron. Show all work.