

Math 366

NEATLY PRINT NAME: \_\_\_\_\_

Exam 3

STUDENT ID: \_\_\_\_\_

Fall 2005

DATE: \_\_\_\_\_

Scarborough

PHONE: \_\_\_\_\_

EMAIL: \_\_\_\_\_

SECTION (circle one): 502<sub>TR3:55pm</sub> 503<sub>TR5:30pm</sub>

"On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work."

\_\_\_\_\_  
Signature of student

Academic Integrity Task Force, 2004

<http://www.tamu.edu/aggiehonor/FinalTaskForceReport.pdf>

**WRITE ALL SOLUTIONS IN THE SPACE PROVIDED; FULL CREDIT WILL NOT BE GIVEN WITHOUT CORRECT ACCOMPANYING WORK. FULLY SIMPLIFY ALL ANSWERS AND GIVE EXACT ANSWERS UNLESS OTHERWISE STATED. WHERE PROVIDED, PUT YOUR FINAL ANSWER IN THE BLANK PROVIDED. POINTS WILL BE DEDUCTED FOR SPELLING ERRORS. REMEMBER YOUR UNITS!**

(6pts) 1. Choose an appropriate *metric* unit you would use to measure the following.

- a. \_\_\_\_\_ the thickness of your Math 366 textbook
  
- b. \_\_\_\_\_ the area of projection screen in this classroom
  
- c. \_\_\_\_\_ the amount of water in a large seeded watermelon

\_\_\_\_\_ (3pts) 2. Find the exact distance between the points  $(-2, -6)$  and  $(4, -7)$ .

\_\_\_\_\_ (4pts) 3. Find the exact surface area  $S$  of a right circular cone that has radius of 15 mm and height of 8 mm.

\_\_\_\_\_ (4pts) 4. If the area of a sector is  $\frac{245\pi}{12}$  square centimeters with radius 7 cm, what is the measure of its central angle in degrees?

(14pts – 2 pts each blank) 5. Convert. When possible, give exact answers; otherwise, give to one decimal places.

a.  $150 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$

b.  $117 \text{ ft}^2 = \underline{\hspace{2cm}} \text{ yd}^2$

c.  $4.34 \text{ miles} \approx \underline{\hspace{2cm}} \text{ kilometers}$

d.  $70^\circ \text{ C} = \underline{\hspace{2cm}}^\circ \text{ F}$

e.  $300 \text{ cm}^3 = \underline{\hspace{2cm}} \text{ L}$

f.  $1 \text{ inch} \approx \underline{\hspace{2cm}} \text{ cm}$

g.  $500 \text{ grams H}_2\text{O} = \underline{\hspace{2cm}} \text{ dm}^3 \text{ H}_2\text{O}$

\_\_\_\_\_ (4pts) 6. What is the exact perimeter of a rectangle whose base is 6 meters and whose area is 66 square meters?

\_\_\_\_\_ (4pts) 7. What is the exact volume of a sphere of radius 6 mm?

\_\_\_\_\_ (3pts) 8. Find the exact surface area of a right circular cylinder of diameter 10 inches and height of 4 inches.

\_\_\_\_\_ (5pts) 9. Find the exact volume  $V$  of a square pyramid whose lateral faces are equilateral triangles with side length of 8 meters.

\_\_\_\_\_ (3pts) 10. Find the exact volume of a 9 meter by 8 meter rectangular prism of height 2 meters.

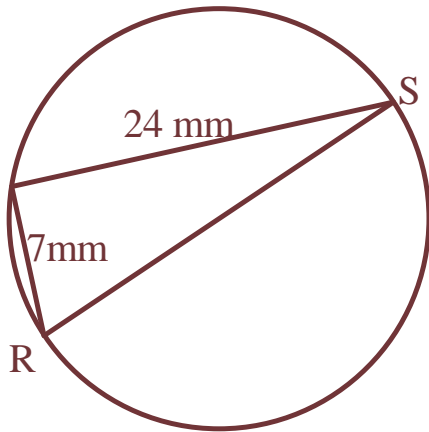
\_\_\_\_\_ (4pts) 11. Find the exact surface area of a octahedron with edge length 2 mm.

12. In apothecary weights, 60 grains is a dram and 8 drams is an apothecary ounce and 96 drams is an apothecary pound.

\_\_\_\_\_ ( 3pts) a. How many apothecary ounces are in an apothecary pound?

\_\_\_\_\_ ( 3pts) b. How many apothecary ounces are 2400 grains?

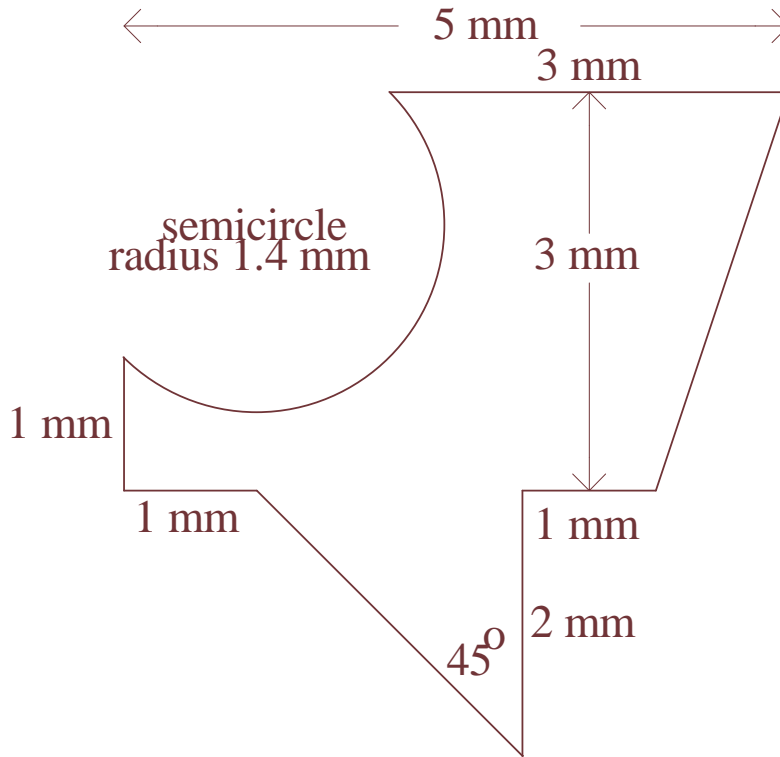
\_\_\_\_\_ (4pts) 13. What is the length of diameter  $\overline{RS}$  in the given circle?



\_\_\_\_\_ (4pts) 14. Find the exact length of a 30-degree arc of a circle of radius 16 dm.

(5pts) 15. Can 10 m, 24 m and 25 m be the lengths of the sides of a *right* triangle? Why or why not? Name and state what theorem you use in your explanation.

16. Given the figure, exactly find the following. If it looks like a right angle, it is.



a. (4pts) \_\_\_\_\_ perimeter

b. (4pts) \_\_\_\_\_ area



(4pts) 18. State Pythagorean Theorem. Your statement of the Pythagorean must stand alone without the use of a figure.

(6pts) 19. Prove the Pythagorean Theorem.