

Matching questions – worth 2 points each

1. Circle all that are true: Area can be measured in: (Think about what it means to measure area)
 - a. Hands
 - b. Squares
 - c. Regular hexagons
 - d. Cubes
 - e. Tetrahedrons
2. Circle all that are true: Volume can be measured in:
 - a. Hands
 - b. Squares
 - c. Regular hexagons
 - d. Cubes
 - e. Tetrahedrons

True False questions – worth 1 point each

3. True False Inches on a tape measure are divided into 10ths.
4. True False A good pneumonic for the metric system is
"King Henry died by drinking chocolate milk."
5. True False The measuring system that includes feet, inches, miles is called the Customary System.
6. True False The metric system is also called the Systeme International, or SI system.
7. True False The height of a triangle is always perpendicular to the side that is considered the base.
8. True False It is best to start kids off by measuring with standard units rather than non-standard units such as hands and feet.

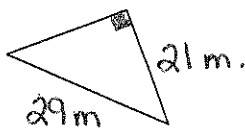
9. Match the following with their most likely match. (worth 5 points)

- | | | | | |
|--|-------------------|------------------|-------------------|------------------|
| _____ i. $20^{\circ}C$ | A. 50m | B. 6m | C. 100cm | D. $32^{\circ}F$ |
| _____ ii. Boiling Point of Water | | | | |
| _____ iii. $0^{\circ}C$ | E. $100^{\circ}F$ | G. $50^{\circ}C$ | H. $212^{\circ}F$ | J. $20^{\circ}F$ |
| _____ iv. Height of a two-story building | | | | |
| _____ v. Weight of your textbook. | K. 20kg | L. 2kg | M. 1g | N. $68^{\circ}F$ |

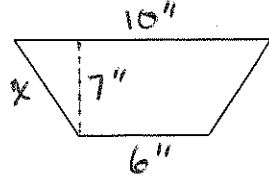
10. Show how one can use the area of a triangle to derive the area formula of a trapezoid. (worth 5 pts)
Be neat and clear to receive points.

11. Use the Pythagorean Theorem to find the missing side. (worth 6 points)

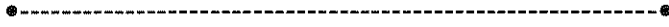
a.



b. An isosceles Trapezoid



12. Using your metric "hand" measures, measure the length of \overline{AB} in either centimeters or decimeters.
(worth 3 points)



13. Find the perimeters of the figures given (worth 9 pts)

a. A regular hexagon with side length 6 in.

b. a rhombus with side 13m and longer diagonal 24m.

c. A rectangle with length 10' and width 4'.

14. Write a formula for the perimeter of each figure: (worth 6 points)

a. Kite

b. Rhombus

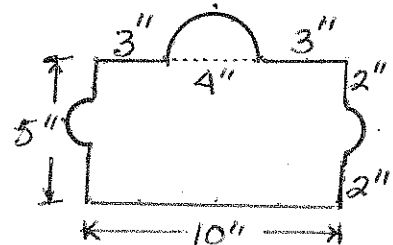
c. Circle

15. A house has the following floor plan. Baseboard and carpet will be installed. To find the amount of baseboard **a. Find the Perimeter.** (worth 5 points each)

And to find the amount of carpet **b. Find the area.**

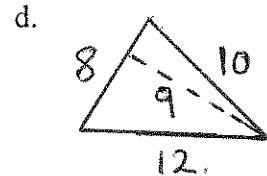
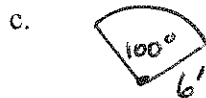
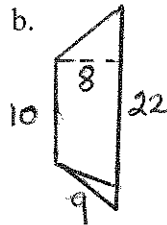
Perimeter: _____

Area: _____



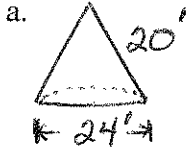
16. Find the area of each figure. Work in a neat and orderly fashion so that I can follow. (8 points)

a. A parallelogram with sides 5cm and 10cm and height 4 cm.

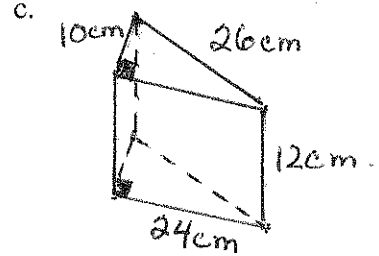


17. Find the area of a rhombus with side 13m and longer diagonal 24 m. (worth 5 points)

18. Find the surface area of each figure. Work in a neat and orderly fashion so that I can follow. (2, 4, 6)



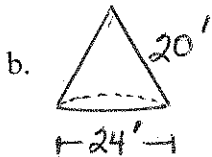
b. the lateral side of a cylinder with height 10 and diameter 4.



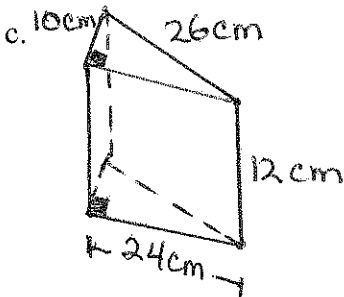
19. Find the volume of each figure. Work in a neat and orderly fashion so that I can follow. (2, 6, 4)

a. A regular pentagonal prism with base area of 100 cm^2 and height of 20 cm .

a. _____



b. _____



c. _____

20. Convert the following (worth 2, 3, 2, 3, 4)

a. $3,000 \text{ cl} = \underline{\hspace{2cm}} \text{ l}$

b. $425 \text{ cm}^2 = \underline{\hspace{2cm}} \text{ m}^2$

c. $5 \text{ miles} = \underline{\hspace{2cm}} \text{ yd}$

d. $0.01 \text{ ft}^2 = \underline{\hspace{2cm}} \text{ in}^2$

e. $\frac{4,500 \text{ kg}}{\text{m}^3} = \underline{\hspace{2cm}} \frac{\text{g}}{\text{cm}^3}$

21. A father and a son working together can cut 48 ft^3 of firewood per hour. If they work an 8-hour day and are able to sell all the wood they cut at \$100 per cord, how much money can they earn? A cord is defined as 4 feet \times 4 feet \times 8 feet. (worth 6 points)

22. Identify how much the following amounts represent. (worth 4 points)

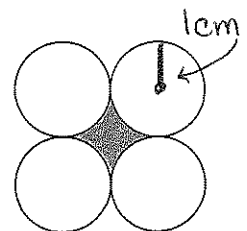
a. "Decidollar"

b. "Centidollar"

c. "Dekadollar"

d. "Kilodollar"

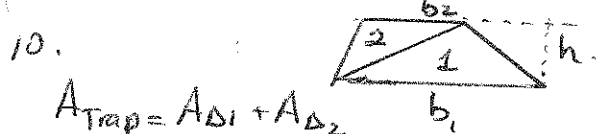
Extra Credit: Worth 5 points. Find the area of the shaded region. The radius shown is 1 cm.



MATH 123 ANSWER KEY EXAM 2 F'06

1. A B C 2. D E 3. False, 4. T 5. T 6. T 7. T 8. F


9. i. N ii. H iii. D iv. B v. L.



$$A_{\text{Trap}} = A_{\Delta 1} + A_{\Delta 2}$$

$$= \frac{1}{2}(b_1 h) + \frac{1}{2}(b_2 h)$$

$$= \frac{1}{2}(b_1 + b_2) h$$

11. a. $29^2 = 21^2 + x^2$ b. 


$$29^2 - 21^2 = x^2$$

$$20 = x$$

$$2^2 + 7^2 = x^2$$

$$7.28 = \sqrt{53} = x$$

12. about 1 dm = 10 cm.

13. a) $P = 6 \cdot 6'' = 36''$ 

b) $P = 4 \cdot 13'' = 52''$

c) $P = 2(10) + 2(4) = 28$

14. a) $P = 2a + 2b$

b. $P = 4s$

c. $C = 2\pi r$

15. a) $P = 2(3) + 4(2) + 10 + \frac{1}{2}(2\pi \cdot 4) + 2\pi(\frac{1}{2})$

$$= 24 + 5\pi = 39.7''$$

b) $A = \frac{1}{2}(\pi)(2^2) + \pi(\frac{1}{2})^2 + (10)(5)$

$$= 2\pi + \frac{1}{4}\pi + 50$$

$$= 2.25\pi + 50 = \text{~~2.25~~} \text{ in}^2$$

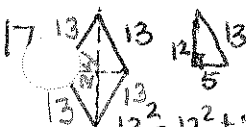
$$= 57 \text{ m}^2$$

16. a) $A = 4 \cdot 10 = 40 \text{ cm}^2$

b) $A = \frac{1}{2}(10 + 22)(8) = 128$

c) $A = \frac{100}{360} \pi (6^2) = 10\pi = 31.4 \text{ ft}^2$

d) $A = \frac{1}{2}(8)9 = 36$

17.  $A_{rh} = 4A_{\Delta}$

$$= 4(\frac{1}{2} \cdot 5 \cdot 12)$$

$$= 4(30)$$

$$= 120 \text{ m}^2$$

$13^2 = 12^2 + x^2$

$$5 = x$$

18. a. $S.A. = \pi(12)^2 + \frac{1}{2}(2\pi \cdot 12) 20$

$$= 144\pi + 240\pi = 384\pi = 1206 \text{ ft}^2$$

b. $S.A. = 2\pi(2)(10) = 40\pi = 125$

c. $SA = 2 \cdot \frac{1}{2}(24 \cdot 10) + (26 + 24 + 10)12$

$$= 960 \text{ cm}^2$$

19. b. $V = \frac{1}{3} A_b \cdot h$ $20^2 = 12^2 + h^2$

$$= \frac{1}{3}(\pi(12)^2) \cdot 16$$

$$= 768\pi = 2,412.7 \text{ ft}^3$$

$$16 = h$$

c. $V = A_b \cdot h = \frac{1}{2}(10 \cdot 24) \cdot 12 = 1,440 \text{ cm}^3$

a. $V = A_b \cdot h = 100 \text{ cm}^2 \cdot 20 \text{ cm} = 2,000 \text{ cm}^3$

20. a. 30 l b. 0.0425 m^2 c. 8,800 yd.

d. 1.44 in^2 e. $\frac{4,500 \text{ kg}}{\text{m}^3} \cdot \frac{1 \text{ m}^3}{1,000,000 \text{ cm}^3} \cdot \frac{1,000 \text{ g}}{1 \text{ kg}} = 4.5 \text{ g/cm}^3$

21. $\frac{48 \text{ ft}^3}{\text{hour}} \cdot \frac{8 \text{ hour}}{1 \text{ day}} \cdot \frac{1 \text{ cord}}{(4 \cdot 4 \cdot 8) \text{ cord}} \cdot \frac{\$100}{\text{cord}} = 300$

22. a. 10¢ b. 1¢ c. \$10 d. \$1,000

Extra Credit