

GEOMETRIC MEASURES EXAM G

NAME \_\_\_\_\_

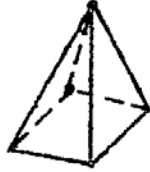
Show all work as necessary on this test or on separate paper.

Turn in all work sheets. Leave answers in terms of  $\pi$ .

BE SURE TO GIVE UNITS!!

1. For the pyramid:

- a) How many vertices?
- b) How many edges?
- c) How many faces?

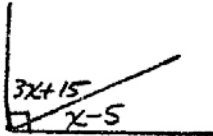


2. Picture problem #1 with a triangular base.

- a) How many vertices?
- b) How many edges?
- c) How many faces?

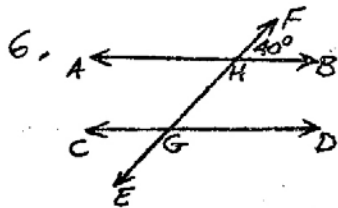
3. Find the circumference and the area of a circle of diameter 10 cm.

4. Find the two angles:



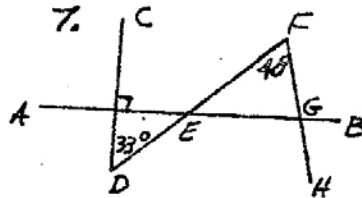
5. An angle is  $21^\circ$ .

- a) Find its supplement.
- b) Find its complement.



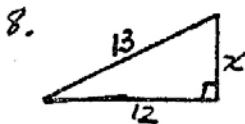
If  $AB$  is parallel to  $CD$ ,  
and  $\angle FHB = 40^\circ$ ,

- a) Find  $\angle CGE$
- b) Find  $\angle DGE$

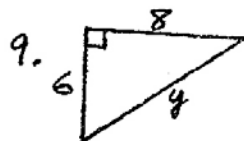


If  $AB \perp CD$ ,  $\angle EFH = 40^\circ$ ,  
and  $\angle CDE = 33^\circ$ ,

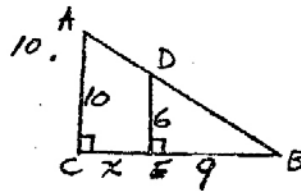
- a) Find  $\angle FEG$ .
- b) Find  $\angle FGE$ .



- a) Find  $x$ .
- b) Perimeter = \_\_\_\_\_
- c) Area = \_\_\_\_\_



- a) Find  $y$ .
- b) Perimeter = \_\_\_\_\_
- c) Area = \_\_\_\_\_



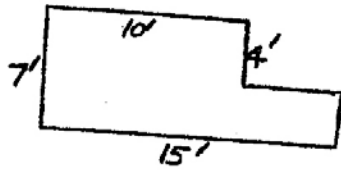
- a) Setup a proportion to solve for  $x$ .
- b) Solve for  $x$ .

11. What is the sum of the angles of a pentagon?

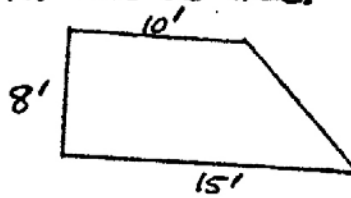
12. What is the sum of the angles of a 10 sided figure?

- b) \_\_\_\_\_
- a) \_\_\_\_\_
- c) \_\_\_\_\_
- 2a) \_\_\_\_\_
- a) \_\_\_\_\_
- q) \_\_\_\_\_
- 3 C= \_\_\_\_\_
- A= \_\_\_\_\_
- 4. x= \_\_\_\_\_
- \_\_\_\_\_ 5
- 5a) \_\_\_\_\_
- a) \_\_\_\_\_
- 6a) \_\_\_\_\_
- a) \_\_\_\_\_
- 7a) \_\_\_\_\_
- a) \_\_\_\_\_
- 8a) \_\_\_\_\_
- a) \_\_\_\_\_
- c) \_\_\_\_\_
- 9a) \_\_\_\_\_
- A) \_\_\_\_\_
- c) \_\_\_\_\_
- 10a) \_\_\_\_\_
- a) \_\_\_\_\_
- 11. \_\_\_\_\_
- 12. \_\_\_\_\_

13. Find the area:



14. Find the area:



15. Find the area and perimeter



given the diameter of the large circle is 8 meters.

GIVEN:

$$V = B \cdot h$$

$$V = \frac{1}{3} B \cdot h$$

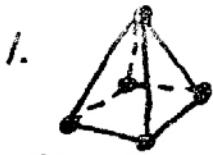
$$V = \frac{4}{3} \pi r^3$$

16. If the dimensions of a rectangle are doubled, what happens <sup>a)</sup> to the perimeter? <sup>A)</sup> to the area?
17. If the dimensions of a solid are doubled, what happens to the volume?
18. If the dimensions of a circle are tripled, what happens <sup>a)</sup> to the circumference? <sup>A)</sup> to the area?
19. If the radius of a sphere is multiplied by 5, what happens to the volume?
20. How many square inches are in a square foot?
21. How many cubic feet are in a cubic yard?
22. How many square cm. are in a square meter?
23. How many cubic cm. are in a cubic meter?
24. 8.04 cm = \_\_\_\_\_ m.
25. 8.04 cg = \_\_\_\_\_ mg.
26. 750 kg = \_\_\_\_\_ g
27. 750 dl = \_\_\_\_\_ l.
28. Find the volume of a box 4 ft by 3 ft by 6 inches.
29. Find the volume of a sphere of radius 10 m.
30. Find the volume of a cylinder of height 8 m and base diameter 10 m.
31. Find the volume of a cylinder of height 10 m and base diameter 8 m.
32. Find the volume of a cone of height 8 m and base diameter 10 m.

13. \_\_\_\_\_
14. \_\_\_\_\_
15. A = \_\_\_\_\_  
P = \_\_\_\_\_
- 16a) \_\_\_\_\_
- A) \_\_\_\_\_
17. \_\_\_\_\_
- 18a) \_\_\_\_\_
- A) \_\_\_\_\_
19. \_\_\_\_\_
20. \_\_\_\_\_
21. \_\_\_\_\_
22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_
25. \_\_\_\_\_
26. \_\_\_\_\_
27. \_\_\_\_\_
28. \_\_\_\_\_
29. \_\_\_\_\_
30. \_\_\_\_\_
31. \_\_\_\_\_
32. \_\_\_\_\_
33. \_\_\_\_\_

33. Find surface area of a 6' by 8' by 10' box.

# GEOMETRIC MEASURES EXAM SOLUTIONS Form G



1. a)  $V = 5$   
 b)  $AE = 8$   
 c)  $f = 5$

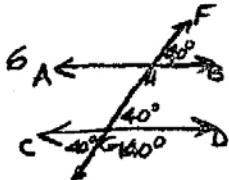


2. a)  $V = 4$   
 b)  $AE = 6$   
 c)  $f = 4$

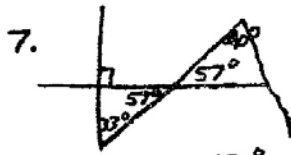
3.  $d = 10\text{cm}$   
 $r = 5\text{cm}$   
 a)  $C = \pi d = 10\pi\text{cm}$   
 b)  $A = \pi r^2 = 25\pi\text{cm}^2$

4.  $3x + 15 + x - 5 = 90$   
 $4x + 10 = 90$   
 $4x = 80$   
 $x = 20^\circ$   
 $3x + 15 = 75^\circ$   
 $x - 5 = 15^\circ$

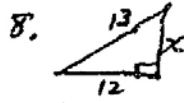
5. a)  $180 - 21 = 159^\circ$   
 b)  $90 - 21 = 69^\circ$



6.  $\angle CGE = 40^\circ$   
 $\angle DGE = 140^\circ$

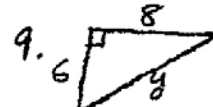


7.  $90 - 33 = 57^\circ$   
 $57^\circ + 40^\circ = 97^\circ$   
 $180^\circ - 97^\circ = 83^\circ$

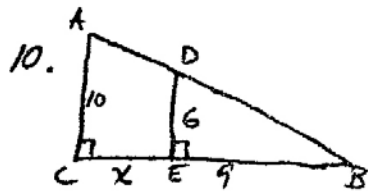


8. a)  $x^2 + 12^2 = 13^2$   
 $x = 5$   
 b)  $P = 12 + 5 + 13 = 30$   
 c)  $A = \frac{1}{2}bh = \frac{1}{2} \cdot 12 \cdot 5 = 30$

(Note: Coincidence!! Perimeter usually does not equal area!!)



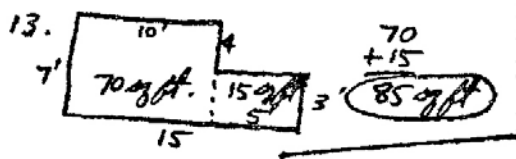
9. a)  $6^2 + 8^2 = y^2$   
 $100 = y^2$   
 $y = 10$   
 b)  $P = 6 + 8 + 10 = 24$   
 c)  $A = \frac{1}{2}bh = \frac{1}{2} \cdot 6 \cdot 8 = 24$



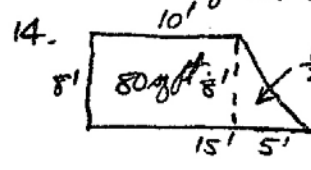
10.  $\frac{AC}{DE} = \frac{CB}{EB}$   
 $\frac{10}{6} = \frac{x+9}{9}$   
 $90 = 6x + 54$   
 $36 = 6x$   
 $x = 6$

11. Pentagon = 5 sides  
 $5 - 2 = 3$  triangles.  
 $180 \times 3 = 540^\circ$

12.  $10 - 2 = 8$  triangles.  
 $180 \times 8 = 1440^\circ$



13.  $70\text{sq ft} + 15\text{sq ft} = 85\text{sq ft}$   
 Semi Perim =  $\frac{\pi d}{2} = \frac{8\pi}{2} = 4\pi\text{m}$   
 $\pi d = 8\pi\text{m}$



14.  $\frac{1}{2}bh = \frac{1}{2}(8)(5) = 20\text{sq ft}$   
 $+ 80\text{sq ft} = 100\text{sq ft}$

15.  $A_{\text{semi}} = \frac{1}{2}\pi r^2 = \frac{1}{2}\pi \cdot 4^2 = 8\pi\text{sq m}$   
 $A_{\text{circle}} = \pi r^2 = \pi \cdot 2^2 = 4\pi$   
 $A = 8\pi - 4\pi = 4\pi\text{sq m}$

16a) Doubled  
 b)  $2^2 = 4$  times  
 17.  $2^3 = 8$  times

22.  $1\text{m} = 100\text{cm}$   
 $100^2 = 10,000\text{sq cm}$   
 23.  $100^3 = 1,000,000\text{cu cm}$

18a) Circumf = linear unit.  
 = Tripled.  
 b) Area = sq. units  
 $= 3^2 = 9$  times

19. Sphere Volume = cubic units.  
 Volume  $5^3 = 125$  times

20.  $12^2 = 144\text{sq in}$   
 21.  $3^3 = 27\text{cu ft}$

24.  $8.04\text{cm} = 0.0804\text{m}$   
 25.  $8.04\text{cg} = 80.4\text{mg}$   
 26.  $750\text{kg} = 750,000\text{g}$   
 27.  $750\text{dL} = 75\text{L}$   
 28.  $4' \times 3' \times \frac{1}{2}' = 6\text{cu ft}$   
 (Also  $10,368\text{cu in}$ )  
 29.  $V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi \cdot 10^3 = 4000\pi\text{cu m}$

30.  $V = \pi r^2 h$  ( $d = 10\text{m}$ )  
 $= \pi \cdot 5^2 \cdot 8$   $r = 5\text{m}$   
 $= 200\pi\text{cu m}$   
 31.  $V = \pi \cdot 4^2 \cdot 10$   $d = 8\text{m}$   
 $= 160\pi\text{m}^3$   $r = 4\text{m}$   
 32.  $V = \frac{1}{3}\pi r^2 h = \frac{1}{3}\pi \cdot 5^2 \cdot 8 = \frac{200\pi}{3}\text{m}^3$   
 33.  $6' \times 8' \times 10'$   
 $2(6 \times 8) = 96$   
 $2(8 \times 10) = 160$   
 $+ 2(6 \times 10) = 120$   
 $376\text{sq ft}$