¡FINITE MATH   GEOMETRICS H   NAME_____

Show all work as necessary on this test or on separate paper.
Turn in all work sheets. No Calculators.
Leave answers in terms of π. BE SURE TO GIVE UNITS!

1. In the metric system,
   a) a _____ is the width of an aspirin
   b) a _____ is slightly more than a yard.
   (10ea) c) a _____ is slightly more than a quart.
   d) a _____ is slightly more than two pounds.
   e) A kilometer is (more, less) than a mile.

2a) 84 km = _____ m
b) 6.5 cm = _____ mm
c) 10 g = _____ kg
d) 1.5 ml = _____ cl
e) 1.5 dl = _____ ml

2. Find the circumference
   and area of a circle of
   radius 10 m.

(2ea) C=   A=

3. Find the cost to enclose a circular
   area of diameter 30 feet with
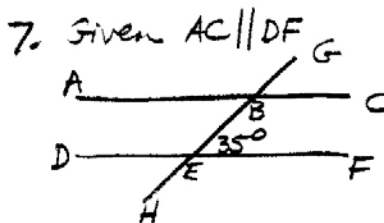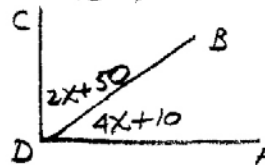   fence that costs $3 per yard.

4. The length of a rectangle is
   5 more than 3 times the width.
   If perimeter is 42 cm, write
   the equation and find the length.

(2ea
part)

5a) An angle less than 90° is said
   to be _____.
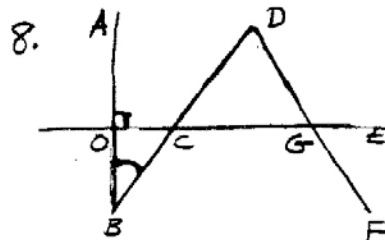b) An angle more than 90° but less
   than 180° is _____.

6. Find x and ∠ADB.

7. Given AC || DF

a) Find ∠ABE _____
b) Find ∠CBE

8.

If ∠B=43°, ∠D=60°,
a) Find ∠DCE _____

10a) Find the sum of the angles of any quadrilateral.

b) of a pentagon.

(2ea)

c) of an octagon.

d) of an n sided figure.

11. Find x

a)

x 13
   5

b)

$\sqrt{7}$ 4
   x

(3ea)

12. Find x and y in the similar triangles:

15   10
   x

4   8
   5

(3ea)

13. Give the equation and solve for x:

5   8
3   x

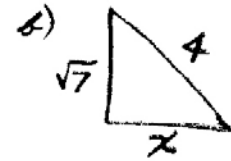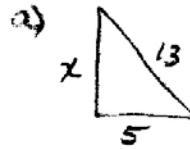14a) What happens to the area of a rectangle if the dimensions are doubled? ____

b) What happens to the area if the dimensions are tripled? ____

(2ea)

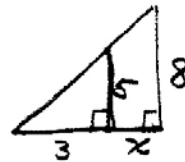c) What happens to the volume of a solid if the dimensions are doubled? ____

d) How many square feet in a square yard? ____

e) How many cubic feet in a cubic yard?

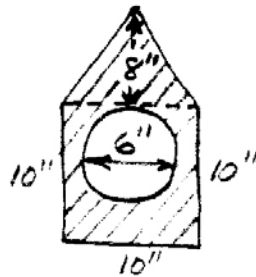15. Given a box that is $10'' \times 8'' \times 3''$:

a) $V =$

(3ea)

b) Surface Area =

16. Find the area of a rectangle that is 10 m. by 35 cm.

(3 ea)

17. Find the shaded area:

8"

6"

10"   10"

10"

18. Find the volume of a sphere of radius 2 m.

(3 ea)

19. Find the volume of a cylindrical can whose base is of radius 10" with height 6".

20. Find the volume of a cylinder whose height is 10" and whose base is of diameter 6".
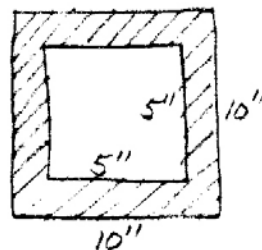
(3 ea)

21. Find the volume of a cone with base radius 4' and height 10'.

22. Find the volume of a pyramid whose base is a 10m. square and whose height is 12 m.

(3 ea)

23. Find the shaded area:

5"   10"

5"

10"

FINITE MATH GEOMETRICS Solutions Form H.

1a) cm.
  b) meter
  c) liter
  d) kg
  e) less

2a) 84 000 $^{(?)}$
  b) 65
  c) 0.01
  d) 0.15
  e) 150

2. $r = 10m$.
  $C = \pi d = \boxed{20\pi \ m}$
  $A = \pi r^2$
  $= \boxed{100\pi \ m^2}$

3. $C = \pi d$
  $= 30\pi \ ft.$
  $= 10\pi \ yd.$
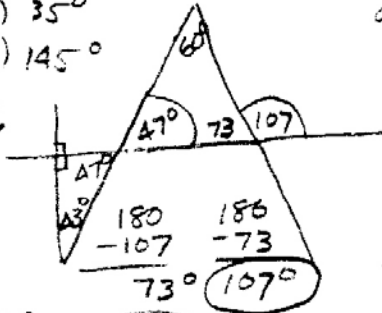 $Cost = 10\pi \times 3$
  $= \boxed{30\pi}$

4. Let $x = $ width.
  $3x + 5 = $ length.
  $2x + 2(3x+5) = 42$
  $2x + 6x + 10 = 42$
  $8x = 32$
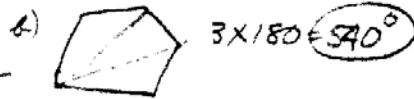 $x = 4 \ cm.$
  $L = 3x + 5 = \boxed{17 \ cm}$

5a) acute
  b) obtuse

7a) $35°$
  b) $145°$

9a) $2 \times 180° = \boxed{360°}$
  b) $3 \times 180° = \boxed{540°}$

11a) $x^2 + 5^2 = 13^2$
  $x^2 + 25 = 169$
  $x^2 = 144$
  $\boxed{x = 12}$

6. $2x + 50 + 4x + 10 = 90$
  $6x = 30$
  $\boxed{x = 5°}$
  $\boxed{4x + 10 = 30°}$

8.

  a) $\angle DCE = \boxed{47°}$
  b) $\angle DGE = \boxed{107°}$

  180
  -107
  ———
  $73°$ $\boxed{107°}$

  186
  -73
  ———
  $\boxed{107°}$

c) $(8-2) \ 180 = 6 \cdot 180 \boxed{1080°}$
d) $\boxed{(n-2) \ 180°}$

11b) $(\sqrt{7})^2 + x^2 = 4$
  $7 + x^2 = 16$
  $x^2 = 9$
  $\boxed{x = 3}$

15a) $10 \times 8 \times 3 = \boxed{240 \ in^3}$
  b) $2 - 10 \times 8 = 160$
  $2 - 10 \times 3 = 60$
  $2 - 8 \times 3 = 48$
  $\boxed{268 \ in^2}$

12. $\dfrac{x}{5} = \dfrac{10}{8}$
  $8x = 50$
  $\boxed{x = \dfrac{25}{4}}$

  $\dfrac{y}{15} = \dfrac{8}{10}$
  $10y = 120$
  $\boxed{y = 12}$

13. $\dfrac{5}{8} = \dfrac{3}{x+3}$
  $5x + 15 = 24$
  $5x = 9$
  $\boxed{x = 9/5}$

14a) 4 Times
  b) 9 Times
  c) 8 Times
  d) $3^2 = 9$
  e) $3^3 = 27$
  f) $100^3 \boxed{1 000 000}$

16. $A = lw$
  $= 10m \times .35m = \boxed{3.5 \ m^2}$
  or
  $= 1000 \ cm \times 35 cm$
  $= \boxed{35,000 \ cm^2}$

17.
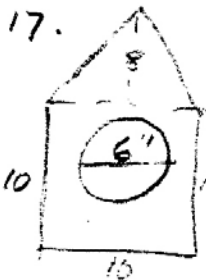
  $A_{TRI.} = \dfrac{1}{2} bh$
  $= \dfrac{1}{2} \cdot 8 \cdot 10 = 40 \ in^2$
  $A_{SQ} = 10^2 = +100 \ in^2$
  $A_{CIR} = \pi r^2 = -9\pi \ in^2$
  ————————————
  $Area = \boxed{(140 - 9\pi) \ in^2}$

18. $A = \dfrac{4}{3}\pi r^3$
  $= \dfrac{4}{3} \pi \cdot 2^3$
  $= \boxed{\dfrac{32\pi}{3} \ m^3}$

19.

  $V = \pi r^2 h$
  $= \pi \cdot 10^2 \cdot 6$
  $= \boxed{600\pi \ in^3}$

20. $V = \pi r^2 h$
  $= \pi \cdot 3^2 \cdot 10$
  $= \boxed{90\pi \ in^3}$

21. $V = \dfrac{1}{3}\pi r^2 h$
  $= \dfrac{1}{3} \pi \cdot 4^2 \cdot 10$
  $= \boxed{\dfrac{160\pi}{3} \ ft^3}$

22. $V = \dfrac{1}{3} Bh$
  $= \dfrac{1}{3} \cdot 10^2 \cdot 12$
  $= \boxed{400 \ m^3}$

23.

  $A_{lg} = 100 \ in^2$
  $A_{sm} = -25 \ in^2$
  ————————
  $\boxed{75 \ in^2}$

24. $\dfrac{4 \ eggs}{lwh} = \dfrac{x \ eggs}{(3l)(3w)(3h)}$