#1 $16 - 9\frac{1}{2} = 6\frac{1}{2}u^2$

#2. $12 - 7 = 5u^2$

#3 $12 - 6\frac{1}{2} = 5\frac{1}{2}u^2$

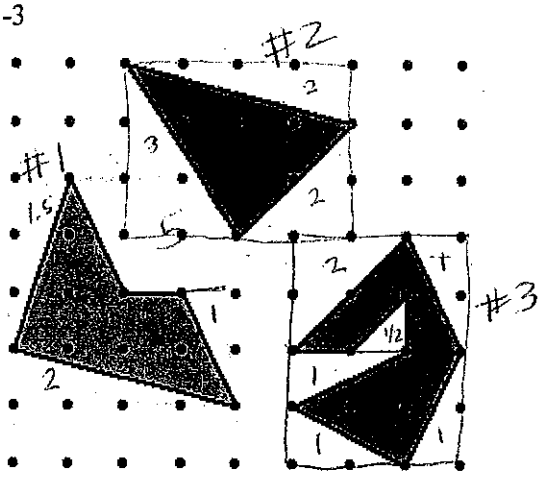
Name Key

Unit 9 Study Guide

Show All Your work!

Find the area of each figure.

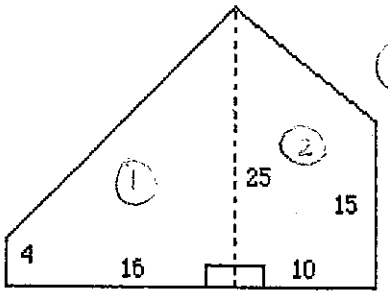
1-3



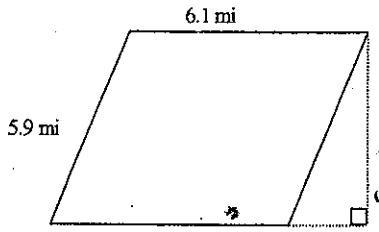
① $\frac{(4+25)16}{2} = 232$

② $\frac{(25+15)16}{2} = 200$

$A = 432u^2$



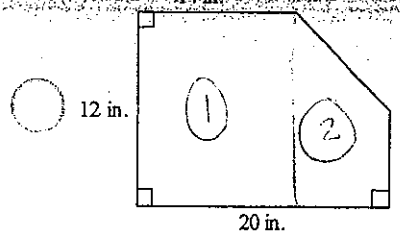
7.



6.1×2.6

$A = 15.86\ mi^2$

4.



① $14 \times 12 = 168\ in^2$

② $\frac{(12+10)6}{2}$ $66\ in^2$

$A = 234\ in^2$

Not drawn to scale

8. Find the radius of a circle with the circumference of 25.12 inches. Use 3.14 for π.

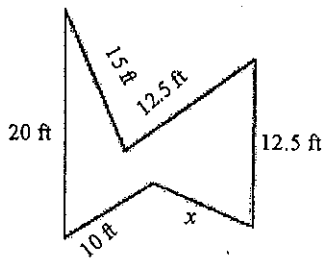
$C = 2\pi r$

$25.12 = 2(3.14)r$

$\frac{25.12}{6.28} = \frac{6.28r}{6.28}$

$4\ in = r$

6. Find the length of side x if the perimeter equals 77.5 ft.



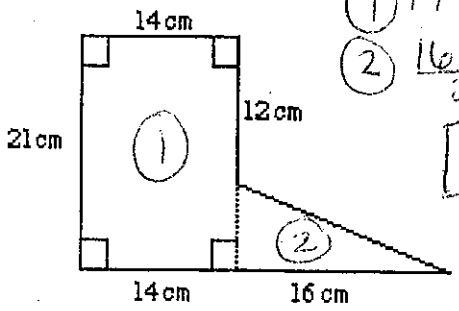
$20 + 15 + 12.5 + 12.5 + 10 + x = 77.5$

$70 + x = 77.5$

$-70 \quad -70.0$

$x = 7.5\ ft$

5.



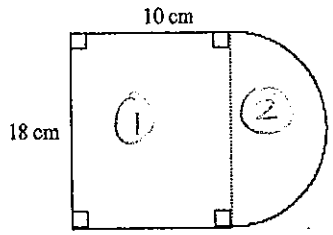
① $14 \times 21 = 294$

② $\frac{16 \times 9}{2} = 72$

$A = 366\ cm^2$

Name_____

10. The drawing is composed of a rectangle and a semicircle. Find the area of the figure. ~~Leave your answer as π.~~



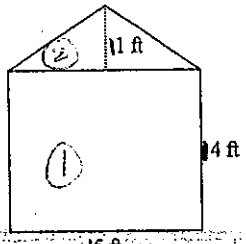
Not drawn to scale

① $10 \times 18 = 180$

② $A = \pi r^2$
$= 3.14 \times 9^2$
$= 254.34$
$\frac{254.34}{2}$
$= 127.17$

$A = 307.17\ cm^2$

11. 'The diagram shows the dimensions of the front of a storage building. What is the area of the entire front of the building?

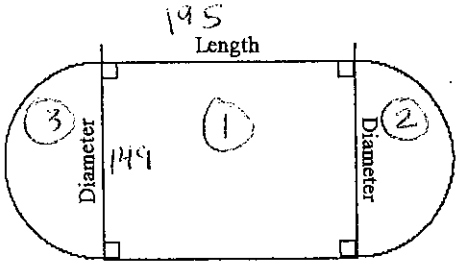


① $14 \times 15 = 210$

② $\frac{15 \times 11}{2} = 82.5$

$A = 292.5\ ft^2$

12. A field is to be fertilized at a cost of ~~$0.08~~ $0.12 per square yard. The rectangular part of the field is 195 yards long and the diameter of each semicircle is 149 yards. Find the cost of fertilizing the field. Use 3.14 for π.



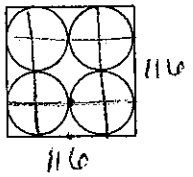
① $195 \times 149 = 29055$

② $\frac{3.14 \times (74.5)^2}{2} = 8713.8925$

③ 8713.8925

$A = 46482.7854\ yd^2$
times $0.12 = \$5577.93$

13. At the Magic Garden, a rose garden is being designed as shown. The outer figure is a square with side length of 116 feet.



a. What is the diameter of one circle? Explain how you find the diameter.

58 ft
divide side of square by 2

b. The roses are to be planted in the four circles. The rest of the space will be covered by wood chips. What is the area of the surface that will be covered by wood chips? Explain how you find this area.

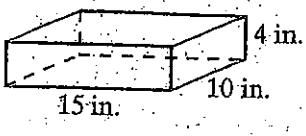
square $= 13456\ ft^2$

1 circle $= 3.14 \times 29^2$
$= 2640.74\ ft^2$
$\times 4$
10562.96

square − 4 circles
$2893.04\ ft^2$

Find the surface area of each space figure. If the answer is not a whole number, round to the nearest tenth.

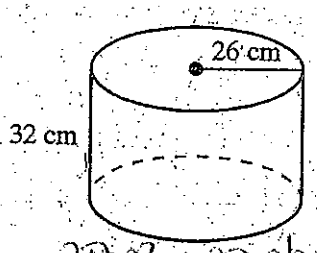
1.



$15 \times 10 = 150 \times 2 = 300$
$15 \times 4 = 60 \times 2 = 120$
$10 \times 4 = 40 \times 2 = 80$

$500 in^2$

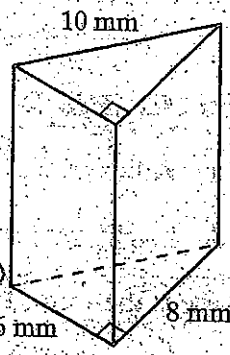
2.



$2\pi r^2 + 2\pi rh$
$2(3.14)(26^2) + 2(3.14)(26)(32)$
$4245.28 + 5224.96$

$9470.24 cm^2$
$9470.2 cm^2$

3.



triangles
$\frac{6 \times 8}{2} = 24$
24

rect.
$18 \times 8 = 144$

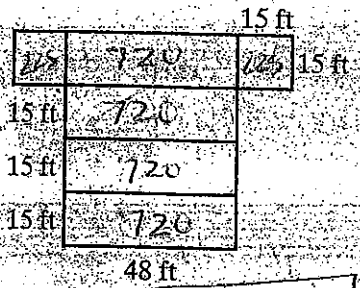
rect.
$6 \times 18 = 108$

rect.
$10 \times 18 = 180$

$480 mm^2$

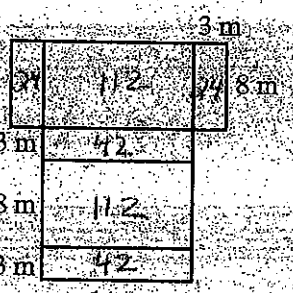
Find the surface area of the space figure represented by each net to the nearest square unit.

4.



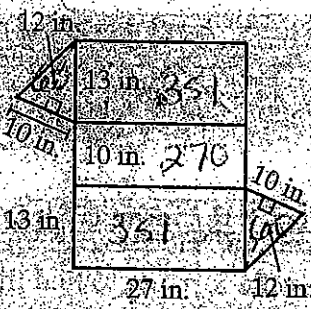
$13330 ft^2$

5.



$1356 m^2$

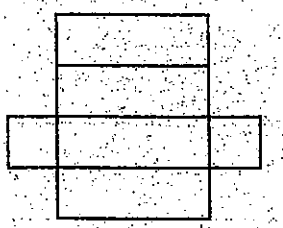
6.



$1092 in^2$

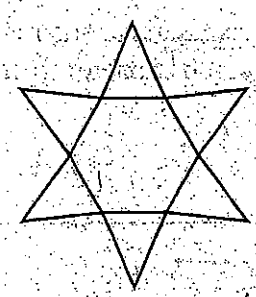
Name the space figure you can form from each net.

1.



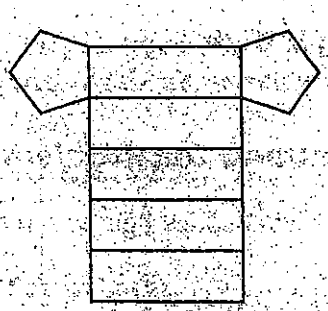
rectangular prism

2.



hexagonal pyramid

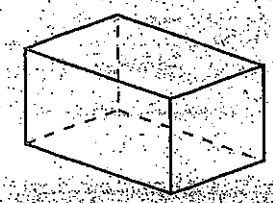
3.



pentagonal prism

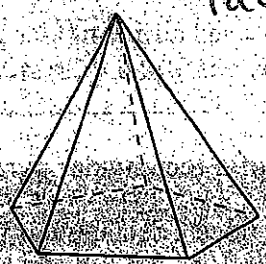
For each figure, describe the base(s) and name the figure. Tell the number of faces, edges, and vertices.

4.



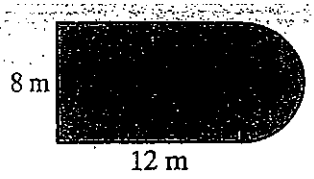
base = rectangle
rectangular prism
$F = 6 \quad E = 12 \quad V = 8$

5.



base = pentagon
pentagonal pyramid
$F = 6 \quad E = 10 \quad V = 6$

10.



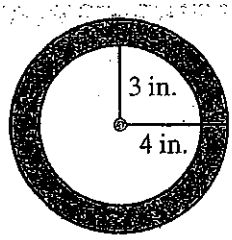
rect: 8×12=96

semicircle $\frac{3.14 \times 4^2}{2}$

25.12

$121.12 m^2$

11.



Big Circle

$3.14(4^2) = 50.24$

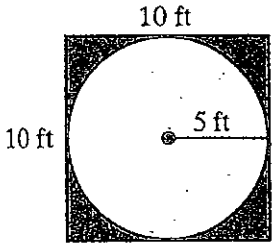
Small Circle

$3.14(3^2) = 28.26$

Big − Small = 21.98

$21.98 in^2$

12.



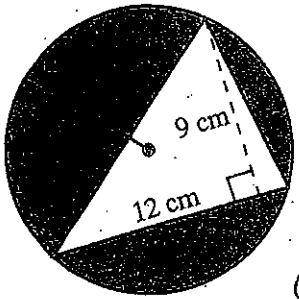
Square = 100

Circle $3.14(5^2) = 78.5$

Square − Circle

$21.5 ft^2$

13.



Circle

$3.14(8^2) = 200.96$

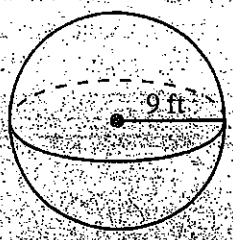
Triangle $\frac{12 \times 9}{2} = 54$

Circle − Triangle

$146.96 cm^2$

Find the volume of each figure to the nearest cubic unit.

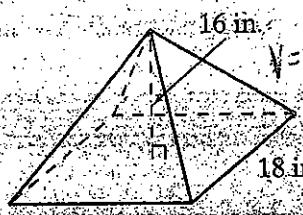
1.



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

$3052 ft^3$

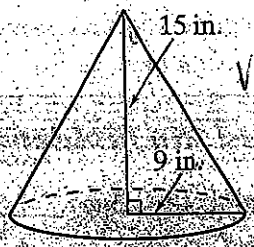
2.



$V = \frac{1}{3} lwh$

$1728 in^3$

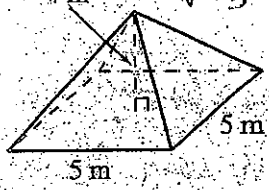
3.



$V = \frac{1}{3}\pi r^2 h$

$1272 in^3$

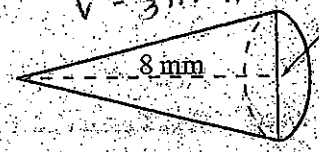
4.



$V = \frac{1}{3} lwh$

$33 m^3$

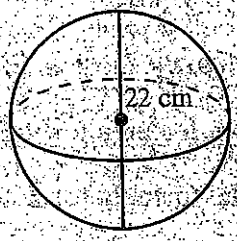
5.



$V = \frac{1}{3}\pi r^2 h$

$33 mm^3$

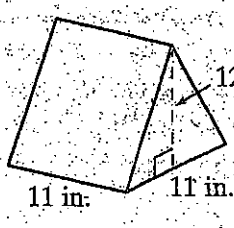
6.



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

$5572 cm^3$

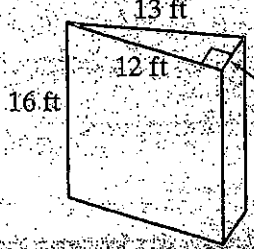
4.



$V = \frac{1}{2} lwh$

$726 in^3$

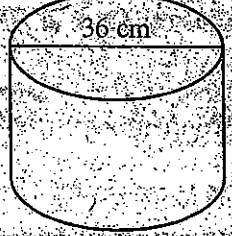
5.



$V = \frac{1}{2} lwh$

$480 ft^3$

6.



$V = \pi r^2 h$

$25434 cm^3$