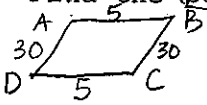
Name: KEY! Date: _____ Hour: _____

Unit F Review

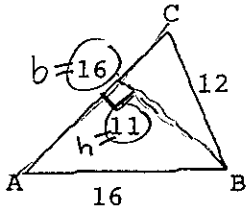
1. In parallelogram ABCD, AB = 5 and BC = 30. Find the perimeter.



$30+30+5+5=$

1) 70 units

2. Find the area of triangle ABC below.



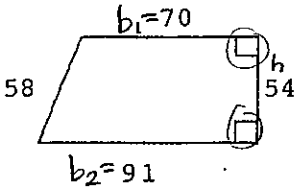
$A = \frac{1}{2} \cdot b \cdot h$

$= \frac{1}{2} \cdot 16 \cdot 11$

$= 88$

2) 88 units^2

3. Find the area of the trapezoid below.



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

$= \frac{1}{2} \cdot 54 (70+91)$

$= 4,347$

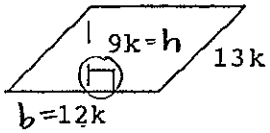
3) 4,347 units^2

4. Find the perimeter of a regular hexagon (6 sides) in which one side has length 11h.

$6 \cdot 11h = 66h$

4) 66h units

5. Find the area of the parallelogram below.



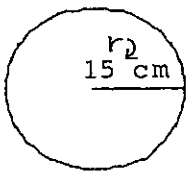
$A = b \cdot h$

$= 12k \cdot 9k$

$= 108k^2$

5) 108k^2 units^2

6. For the circle at the right, find the exact (leave π)
   a. circumference.
   b. area.



$C = 2 \cdot \pi \cdot r$

$= 2 \cdot \pi \cdot 15$

$= 30\pi$

$A = \pi r^2$

$= \pi \cdot 15^2$

$= 225\pi$

6) a) 30π cm

b) 225π cm^2

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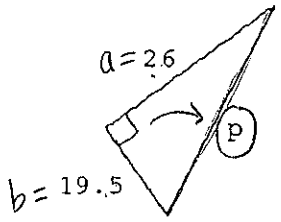
7. Find the length of the missing side.

7) p = 32.5



$a^2 + b^2 = c^2$

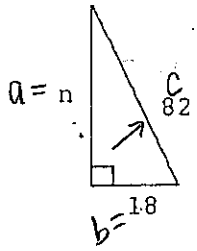
$26^2 + 19.5^2 = p^2$

$\sqrt{1056.25} = \sqrt{p^2}$

$32.5 = p$

8. Find the length of the missing side.

8) n = 80



$a^2 + b^2 = c^2$

$n^2 + 18^2 = 82^2$

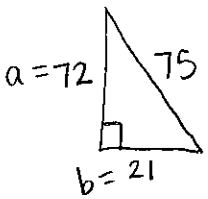
$n^2 + 324 = 6724$

$-324 \quad -324$

$\sqrt{n^2} = \sqrt{6400}$ → $n = 80$

9. The two legs of a right triangle have lengths 21 and 72. What is the perimeter of the triangle?

9) 168 units



$a^2 + b^2 = c^2$

$72^2 + 21^2 = c^2$

$\sqrt{5625} = \sqrt{c^2}$ → $c = 75$

$72 + 21 + 75$

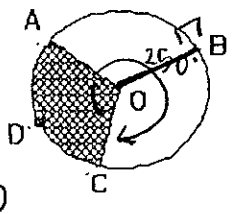
10. In ⊙O at the right, $m\overset{\frown}{ABC} = 250°$ and OB = 17.

a. Find the length of $\overset{\frown}{ADC}$.

b. Find the area of the shaded sector.

10) a) 110°

b) 277.42 units²



$360° - 250$

$\frac{\theta}{360} \cdot \pi r^2$

$\left(\frac{110}{360}\right) \pi \cdot 17^2$

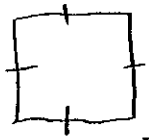
11. Find the perimeter of a square with area 23,716 m².

11) 616 m

$A = s^2$

$\sqrt{23,716} = \sqrt{s^2}$

$154 = s$



154 × 4 = 616

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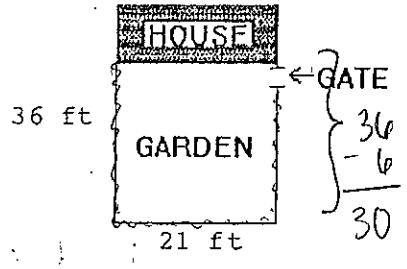
12. A rectangular garden 21 feet wide and 36 feet long is to be built with the short side against the wall of a house. There will be a 6-foot gate in the adjacent side. How much fencing will be needed to enclose the garden?

12) 87 ft

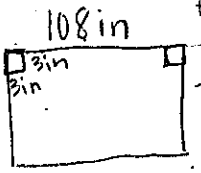


36 + 21 + 30

36 − 6 = 30

13. A rectangular hall floor 6 feet wide and 9 feet long is to be covered with square ceramic tiles that measure 3 inches on a side and cost $0.90 each. What will be the total cost of the tiles?

13) $777.60



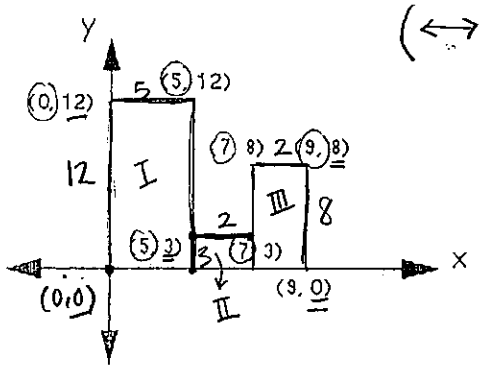
9 ft × 12 = 108 in ÷ 3 = 36 tiles

6 ft × 12 = 72 in ÷ 3 = 24 tiles

864 tiles × 0.90 = $777.60

14. Find the area of the figure below.

14) 82 units²



(↔, ↕)

I: 5 × 12 = 60

II: 2 × 3 = 6

III: 2 × 8 = 16

82

15. There are two different paths you can use to cross a rectangular park which measures 240 m by 470 m. One path is laid out along a diagonal of the park. The other path is laid out along two adjacent sides. To the nearest tenth of a meter, how much shorter is the diagonal path than the path along the two adjacent sides?

15) 182.3 m

next

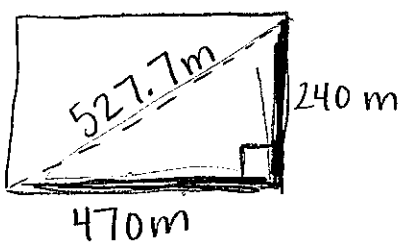
Adjacent: 470 + 240 = 710

$a^2 + b^2 = c^2$

$240^2 + 470^2 = c^2$

$\sqrt{278{,}500} = \sqrt{c^2}$

527.7 = c



710 − 527.7 = 182.3 m

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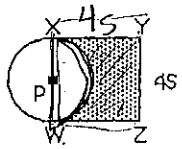
16. Square XYZW has sides with length 4s. $\overline{XW}$ is the diameter of circle P. Write an expression for the area of the shaded region.

$d = 4s \div 2 = 2s$



16) $9.7s^2$ units^2

$16s^2 - 6.3s^2 = 9.7s^2$

Square: $4s \cdot 4s = 16s^2$

½ circle: $\pi \cdot r^2 = \pi \cdot (2s)^2 = \pi \cdot 4s^2 = 12.6s^2 \div 2 = 6.3s^2$

17. Could the numbers 25, 13, and 31 be the lengths of the sides of a right triangle? Give a reason for your answer. $a^2+b^2=c^2$ (31 = c)

17) No, since $794 \neq 961$.

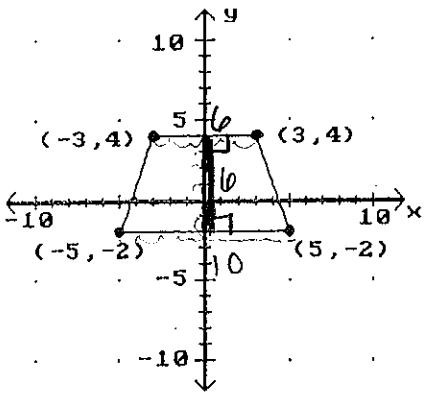
$a^2 + b^2 = c^2$

$13^2 + 25^2 = 31^2$

$794 \neq 961$

18. Calculate the area of the figure.

18) 48 units^2



Trapezoid

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

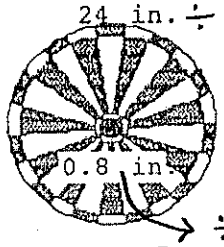
$= \frac{1}{2} \cdot 6(6 + 10)$

$= 48$

19. A dart is thrown at the dart board shown at the right, at random. What is the probability that it will hit the bull's eye at the center, if the diameter of the bull's eye is 0.8 inches, and the diameter of the entire dart board is 24 inches?

19) .1111%

24 in. $\div 2 = 12$ (r)



$\div 2 = 0.4$ (r)

$$\frac{\text{area of bullseye}}{\text{area of target}} = \frac{\pi \cdot r^2}{\pi \cdot r^2} = \frac{\pi \cdot 0.4^2}{\pi \cdot 12^2} = \frac{.5027}{452.39} = .00111$$

.1111%

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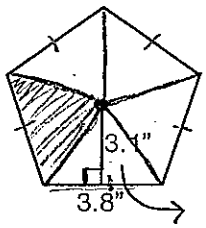
20. Find the area of each regular figure below.

A.



$A = \frac{1}{2} \cdot b \cdot h$

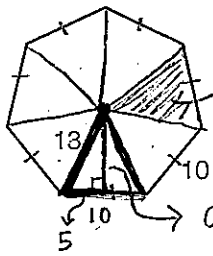
$= \frac{1}{2} \cdot 3.8 \cdot 3.1$

$= 5.89$

$\times 5$

29.45 in^2

B.



7 Δ's

$A = \frac{1}{2} \cdot b \cdot h$

$= \frac{1}{2} \cdot 10 \cdot 12 = 60$ (12)

$\times 7$

420 units

Height:

$a^2 + b^2 = c^2$

$5^2 + b^2 = 13^2$

$25 + b^2 = 169$

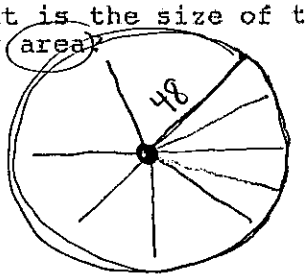
$-25 \quad -25$

$\sqrt{b^2} = \sqrt{144}$

$b = 12$

21. The listening area for a radio station extends 48 miles in every direction from its signal tower. To the nearest square mile, what is the size of the station's listening area?

21) 7238.23 mi^2



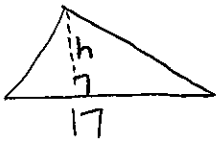
$A = \pi \cdot r^2$

$= \pi \cdot 48^2$

$= 7,238.23$

22. The area of a triangle is 127.5 square units. The length of one side is 17 units. Find the length of the altitude to that side.

22) 15 units



height

$A = \frac{1}{2} \cdot b \cdot h$

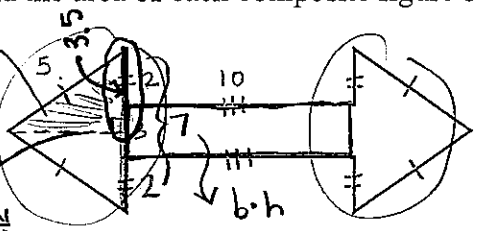
$127.5 = \frac{1}{2} \cdot 17 \cdot h$

$\frac{127.5}{8.5} = \frac{8.5 \cdot h}{8.5}$

$h = 15$

23. Find the area of each composite figure below.

A.



$a^2 + b^2 = c^2$

$3.5^2 + b^2 = 5^2$

$12.25 + b^2 = 25$

-12.25

$\sqrt{b^2} = \sqrt{12.75}$

$b = 3.57$

$A = \frac{1}{2} \cdot b \cdot h$

$= \frac{1}{2} \cdot 7 \cdot 3.57$

$= 12.5$

$\times 2$

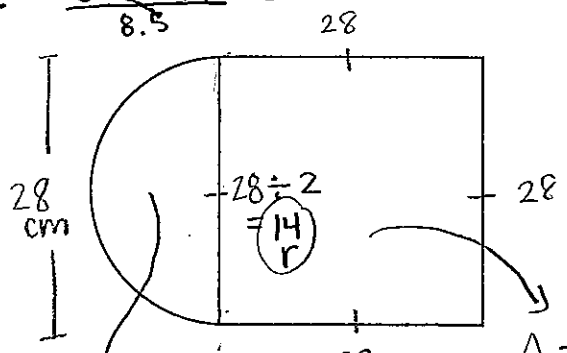
25 Δ's

$= 10 \cdot 3$

$= 30$

$25 + 30 = 55 \text{ units}^2$

B.



½ ○

$A = \pi \cdot r^2$

$= \pi \cdot 14^2$

$= 615.75 \div 2 = 307.9$

307.9 + 784

$= 1091.9 \text{ cm}^2$

$A = s^2$

$= 28^2$

$= 784$