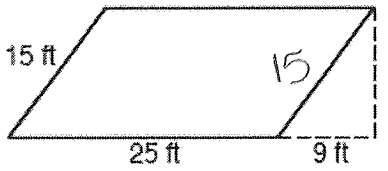
Geometry-Dieckmann
ELIGIBILITY Review

Name Key

Hour _____

Round all answers to the nearest tenth unless otherwise noted. *Show all your work!*

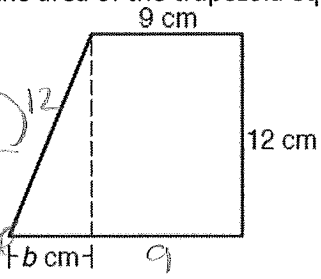
1. Find the area of the parallelogram.



$15^2 - 9^2 =$
$\sqrt{144}$

$25(12) =$
300 ft²

2. What value of *b* makes the area of the trapezoid equal to 138 cm²?



$138 = \frac{(9+b+9)12}{2}$

$\frac{138}{6} = \frac{(18+b)6}{6}$

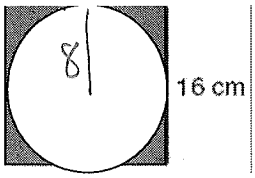
$23 = 18 + b$
$-18 \quad -18$

b = 5 cm

3. A kite has an area of $3x^2$ and the length of one diagonal is 2x that is the length of the second diagonal?

$3x^2 = \frac{2x \cdot d_2}{2}$ $\quad \frac{3x^2}{x} = \frac{x d_2}{x}$ $\quad d_2 = 3x$

4. Given that the circle is inside the square, find area of the shaded region



$16 \cdot 16 = 256$
$\pi \cdot (8)^2 = 201.1$

$256 - 201.1 = 54.9 \text{ cm}^2$

5. Find the area of a circle whose circumference is 20xπ (in terms of π).

$\frac{20x\pi}{2\pi} = \frac{2\pi r}{2\pi}$ $\quad r = 10x$

$A = \pi(10x)^2$
$= 100x^2\pi$

6. Find the height of a trapezoid in which A = 280 cm², b_1 = 8cm, b_2 = 20cm.

$280 = \frac{(8+20)h}{2}$

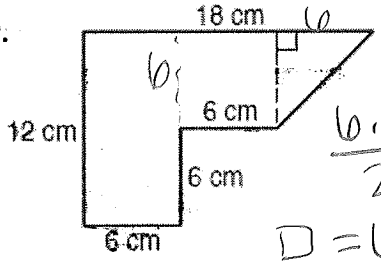
$280 = \frac{28h}{2}$

$\frac{280}{14} = \frac{14h}{14}$

h = 20 cm

Find the area.

7.



$\frac{6 \cdot 6}{2} = 18$

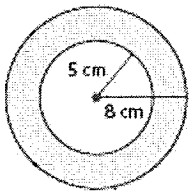
$\square = 6 \times 6 = 36$

$\square = 12 \times 6 = 72$

126 cm²

Find the area.

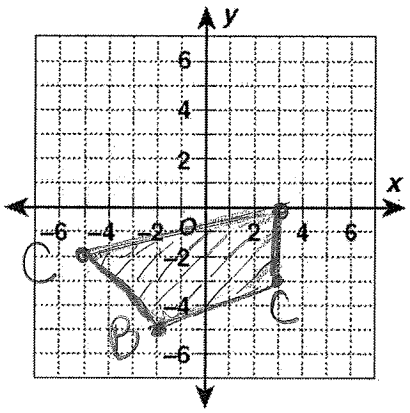
8.



$\pi(5)^2 = 25\pi$
$\pi(8)^2 = 64\pi$

$64\pi - 25\pi =$
$39\pi \text{ cm}^2$

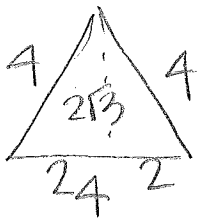
9. Graph the polygon with vertices $A(-5, -2)$, $B(-2, -5)$, $C(3, -3)$, and $D(3, 0)$. Then find the perimeter and area.



≈19

count squares

10. The sides of an equilateral triangle are 4 cm. Find the area.



$4^2 - 2^2 = b^2$

$\sqrt{16-4}$

$= \sqrt{12} = \sqrt{4}\sqrt{3}$

$2\sqrt{3}$

$\frac{4(2\sqrt{3})}{2} =$ $4\sqrt{3}$ or 6.93 cm^2

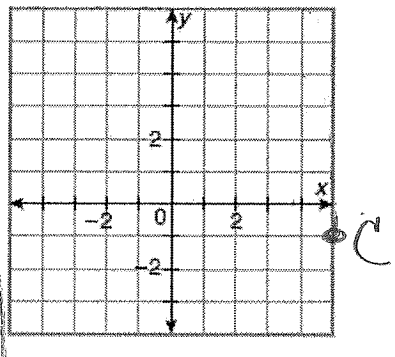
11. The center of a circle is at (5, –1) and goes through the point (4, 8). Find the area of the circle.

$r = \sqrt{1^2 + 9^2} = \sqrt{82} =$

$\sqrt{1+81}$

$\pi(\sqrt{82})^2 =$

82π or 257.6



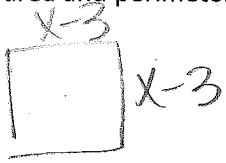
12. If the radius of a circle is multiplied by 5, describe the effect on the area.

$\pi(1)^2 = 1\pi$

$\pi(5)^2 = 25\pi$

x25

13. Find the area and perimeter of a square where each side is (x – 3) in.



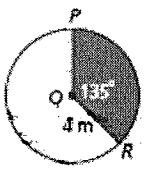
$A = (x-3)(x-3)$

$x^2 - 6x + 9$

$P = (x-3)4$ sides

$4x - 12$ in

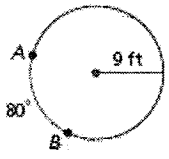
14. Find the sector area. Round your answer to the nearest tenth.



$\pi(4)^2(135/360)$

18.8 m^2

15. Find the arc length. Round your answer to the nearest tenth.



$2\pi(9)(80/360)$

12.57 ft