

# Formal Geometry Assignments

## Area Unit

Day	Date	Assignment (Due the next class meeting)
Tuesday Wednesday	4/30/24 (A) 5/01/24 (B)	<ul style="list-style-type: none"> <li>10.3 pp. 746-748 #18, 19, 22, 28, 32, 35, 36, 41, 42</li> <li>Area Worksheet</li> </ul>
Thursday Friday	5/02/24 (A) 5/03/24 (B)	<ul style="list-style-type: none"> <li>10.4 pp. 757-760 #10-17, 22-24, 26, 41, 42, 45</li> </ul>
Monday Tuesday	5/06/24 (A) 5/07/24 (B)	<ul style="list-style-type: none"> <li>Geometric Probability Wk</li> </ul>
Wednesday Thursday	5/08/24 (A) 5/09/24 (B)	<ul style="list-style-type: none"> <li>Area Review Wk</li> </ul>
Friday Monday	5/10/24 (A) 5/13/24 (B)	<p style="text-align: center;"><b>Area Test</b></p> <ul style="list-style-type: none"> <li>HW: Read and Complete SA 101</li> </ul>

Worksheets and textbook answers are online on [www.washoeschools.net/DRHSmath](http://www.washoeschools.net/DRHSmath)

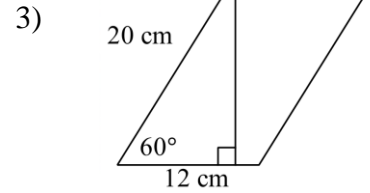
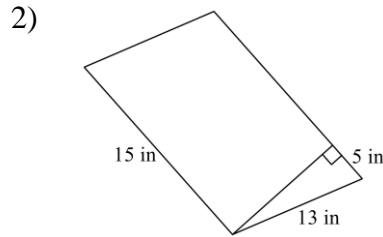
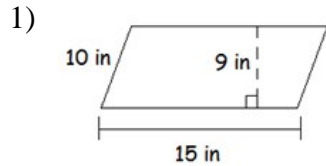
All assignments must be complete the day that they are due to receive full credit:

- Every problem must be attempted with the picture drawn and work shown.
- None of the proofs can be left blank
- Corrections are expected to be done to earn back points missed for each assignment.

\*Students who do every assignment this semester will earn a 2% bonus.

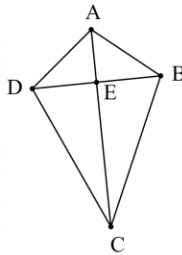
\*Videos can be found on the YouTube channel

For #1 – 3, find the area of each parallelogram. Use exact answers.

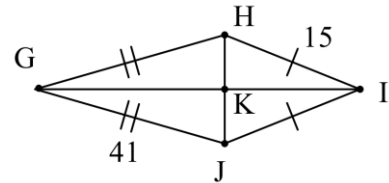


For #4 – 7, find the area of each kite or rhombus. Use exact answers.

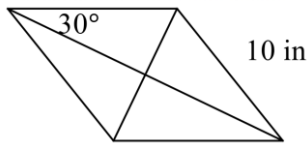
- 4) For the kite shown,  
 $AE = 6$  in,  
 $EC = 9$  in,  
 and  $DB = 8$  in.



- 5)  $HJ = 18$  m  
 $HI = 15$  m  
 $GJ = 41$  m



- 6) the figure shown below is a rhombus



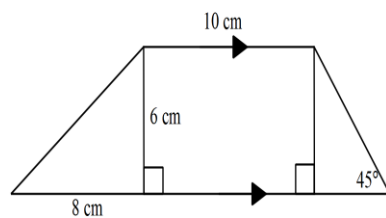
- 7) A rhombus has a perimeter of 20 in, and a longer diagonal of 8 in.

For #8 – 11: Find the area of each shape:

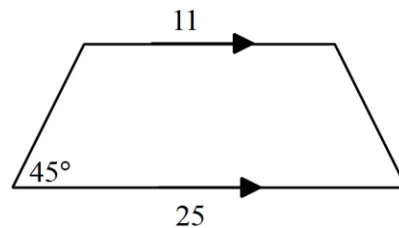
- 8) Equilateral triangle with a perimeter of 30 m.

- 9) Equilateral triangle with a side of 11 mm.

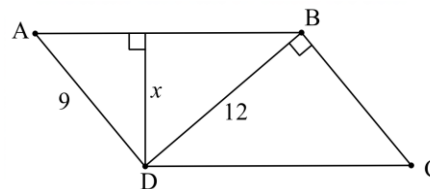
- 10)



- 11) Isosceles Trapezoid



Bonus #1: Find  $x$  in parallelogram ABCD if  $AB = 15$ .



Bonus #2: Find the area of an equilateral triangle with perimeter  $= 27\sqrt{6}$  cm.

**Answers:**

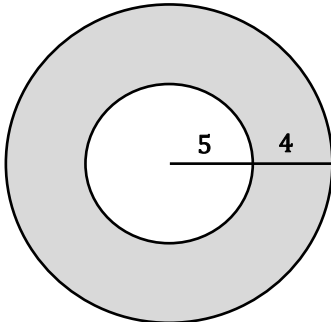
- |                              |                        |                                     |   |                      |
|------------------------------|------------------------|-------------------------------------|---|----------------------|
| 1) $135 \text{ in}^2$        | 2) $180 \text{ in}^2$  | 3) $120\sqrt{3} \text{ cm}^2$       | 4) $60 \text{ in}^2$                    | 5) $468 \text{ m}^2$ |
| 6) $50\sqrt{3} \text{ in}^2$ | 7) $24 \text{ in}^2$   | 8) $25\sqrt{3} \text{ m}^2$         | 9) $\frac{121\sqrt{3}}{4} \text{ mm}^2$ |                      |
| 10) $102 \text{ cm}^2$       | 11) $126 \text{ mm}^2$ | <b>Bonus answers given in class</b> |   |                      |

**SHOW ALL WORK ON YOUR OWN PAPER!**

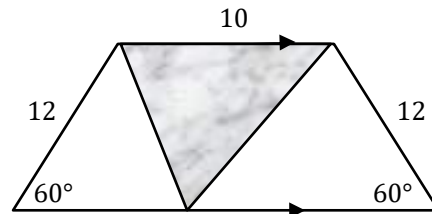
For Problems #1 – 10:

- (a) Find the area of the shaded region. Use exact answers only (no decimals.)  
 (b) Find the probability of randomly choosing a point in the shaded region. Write your answers as a percentage rounded to two decimal places, unless the item has an asterisk, in which case write your answers as a fraction in simplest form.

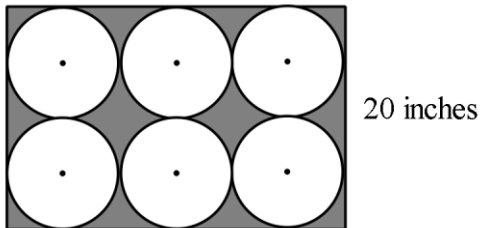
1)



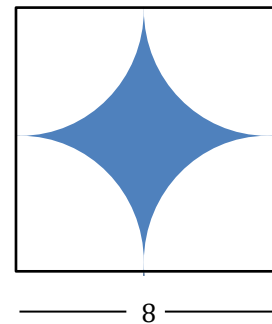
2)



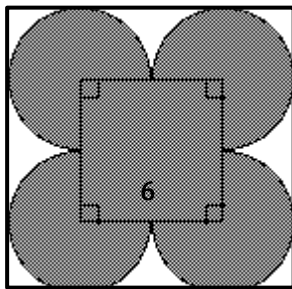
3) All six circles are congruent.



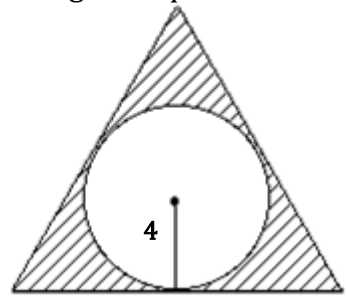
4\*) The quad is a square, and the arcs are  $\cong$ .



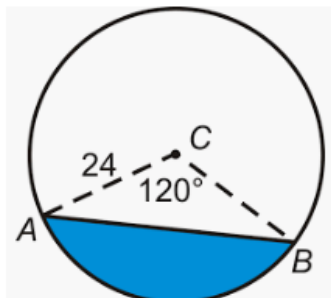
5\*) Each quad is a square, and the arcs are  $\cong$ .



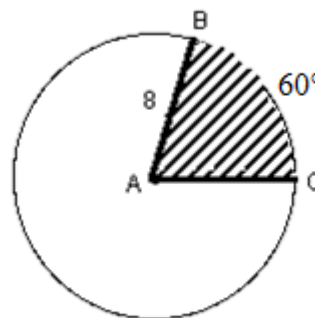
6) The triangle is equilateral with side =  $8\sqrt{3}$



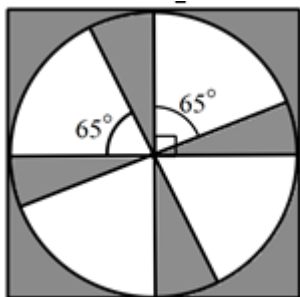
7)



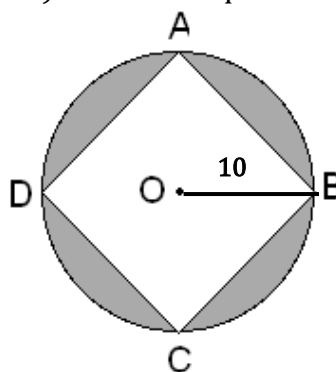
8\*)



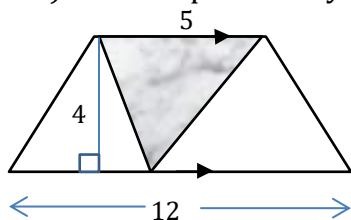
9) The circle is inscribed in a square. Only do part B.  
(Find the probability of the shaded region.)



10\*) ABCD is a square.



11\*) Find the probability of randomly choosing a point in the shaded region.



For #12 – 17, factor.

12)  $20x^2 + 11x - 3$

13)  $3x^2 - 14xy + 16y^2$

14)  $48b^2 - 74b - 10$

15)  $15a^2 + 22ab + 8b^2$

16)  $6m^6n + 7m^5n^2 + 2m^4n^3$

17)  $26a - 13a^2$

1a.  $56\pi u^2$  1b.  $\approx 69.14\%$

2a.  $30\sqrt{3}u^2$  2b.  $\frac{5}{16} = 31.25\%$

3a.  $600 \text{ in}^2$  3b.  $\frac{4-\pi}{\pi} \approx 21.46\%$

4a.  $64 - 16\pi u^2$  4b.  $\frac{4-\pi}{4}$

5a.  $36 + 27\pi u^2$  5b.  $\frac{4+3\pi}{16}$

6a.  $48\sqrt{3} - 16\pi u^2$  6b.  $39.54\%$

7a.  $192\pi - 144\sqrt{3}u^2$  7b.  $19.55\%$

8a.  $\frac{32\pi}{3}u^2$  8b.  $\frac{1}{6}$

9)  $43.28\%$

10a.  $100\pi - 200u^2$  10b.  $\frac{\pi-2}{\pi}$

11)  $\frac{5}{17}$

12)  $(4x+3)(5x-1)$

13)  $(3x-8y)(x-2y)$

14)  $2(8b+1)(3b-5)$

15)  $(5a+4b)(3a+2b)$

16)  $m^4n(3m+2n)(2m+n)$

17)  $13a(2-a)$

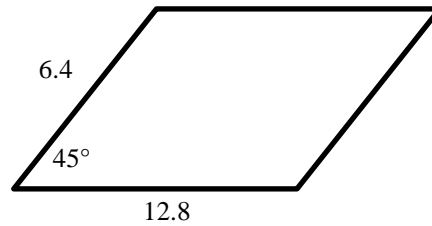
# Area Review Worksheet

Name: \_\_\_\_\_

1. Find the height of an isosceles trapezoid with an area of 96 and bases equal to 9 and 7.

2. The diagonals of a kite are 10 and 22. Find the area of the kite.

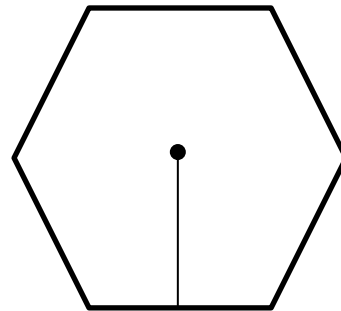
3. Find the area of the parallelogram



Use the diagram to the right for #4-5.

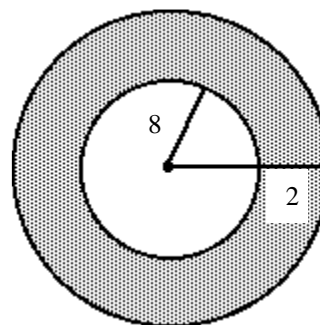
4. Find the apothem of the regular hexagon with a side length of 12.

5. Find the area of the regular hexagon.

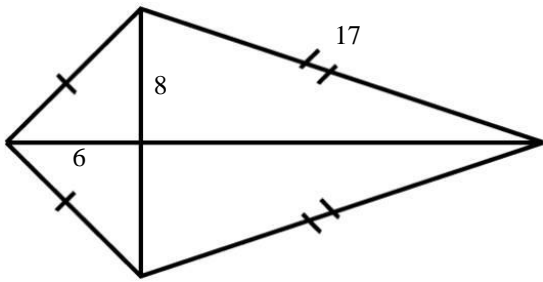


6. Find the area of an equilateral triangle with a side length 9.

7. a.) Find the area of the annulus shown.  
b.) Find the probability of randomly choosing a point in the shaded region. (exact answers only).

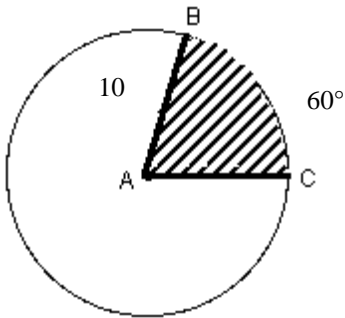


8. Find the area of the kite.

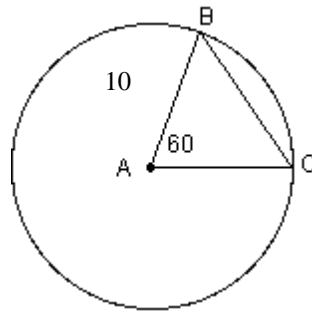


9. Find the area of an equilateral triangle with an altitude of  $10\sqrt{3}$ .

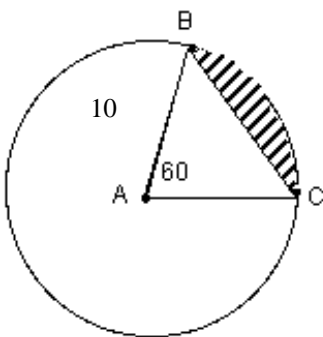
10. Find area of the sector BAC.



11. Find the area of triangle ABC



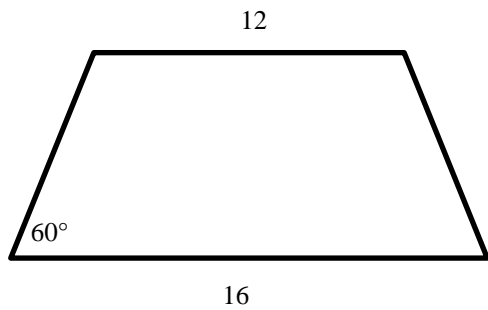
12. Find the area of segment  $\overline{BC}$



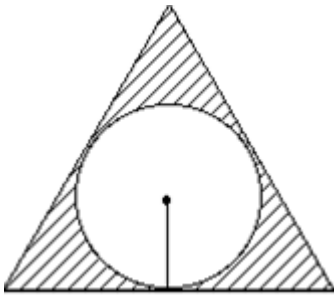
13. Find the area of a circle whose circumference is  $36\pi$

14. If the area of a square is 60, find the perimeter.

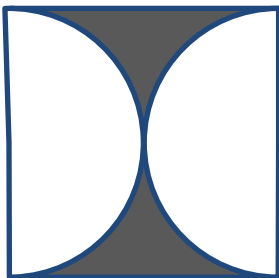
15. Find the area of the isosceles trapezoid.



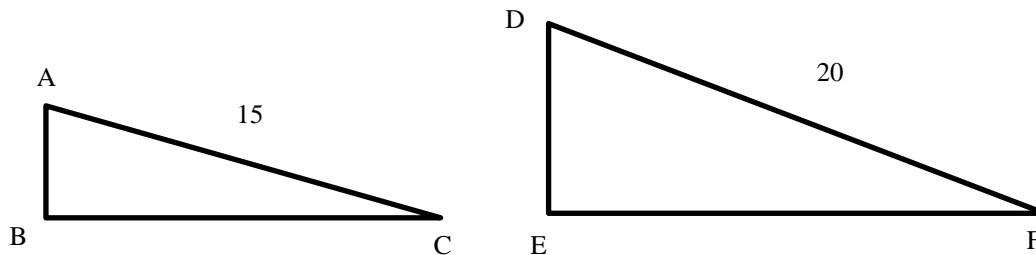
16. a. Find the area of the shaded region if the radius of the circle is 7 and the triangle is equilateral.  
 b. Find the probability of randomly choosing a point in the shaded region. (exact answers only).



17. Find the area of the shaded region if the radius of each circle is 6.

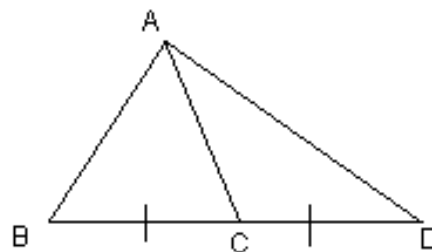


18. If  $\triangle ABC \sim \triangle DEF$ , find the ratio of the area of  $\triangle ABC$  to  $\triangle DEF$ .

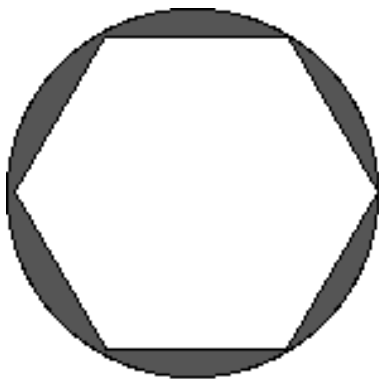


19. If the ratio of area for two similar polygons is 16:49, find the ratio of their corresponding sides.

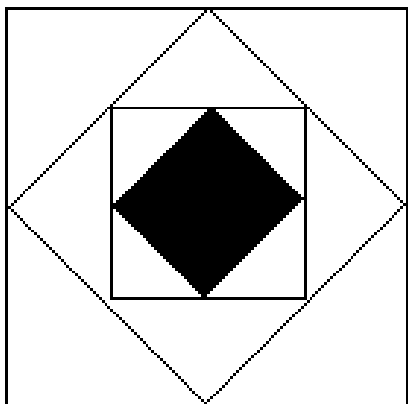
20. Find the ratio of the area of  $\triangle ABC$  to  $\triangle ACD$ .



21. If a regular hexagon is inscribed in a circle with a radius of 7, find the area of the shaded region.



22. A succession of squares is formed by joining the midpoints of each side of each square. If the length of each side of the large square is 20, find the area of the shaded square.



23. A trapezoid has a height of 13 meters, a base length of 11 meters, and an area of 92 square meters. What is the length of the other base.

**Answer Key:**

- 1)  $h = 12$       2)  $A = 110 u^2$       3)  $A \approx 57.93 u^2$       4)  $a = 6\sqrt{3}$       5)  $A = 216\sqrt{3} u^2$   
 6)  $A = \frac{81\sqrt{3}}{4} u^2$     7a)  $A = 36\pi u^2$     7b)  $\frac{9}{25}$       8)  $A = 168 u^2$     9)  $A = 100\sqrt{3} u^2$   
 10)  $A = \frac{50\pi}{3} u^2$     11)  $A = 25\sqrt{3} u^2$     12)  $A = \frac{50\pi}{3} - 25\sqrt{3} u^2$     13)  $A = 324\pi u^2$   
 14)  $P = 8\sqrt{15}$     15)  $A = 28\sqrt{3} u^2$     16a)  $147\sqrt{3} - 49\pi u^2$     16b)  $\frac{(147\sqrt{3} - 49\pi)}{147\sqrt{3}}$   
 17)  $A = 144 - 36\pi u^2$     18) 9:16      19) 4:7      20) 1:1  
 21)  $A = 49\pi - \frac{147\sqrt{3}}{2} u^2$     22)  $A = 50 u^2$       23)  $b_2 \approx 3.15$