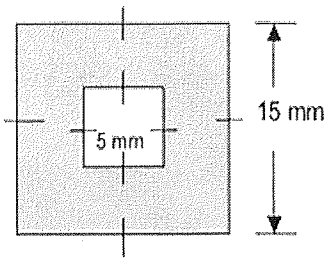
Homework (Th) – Shaded Regions

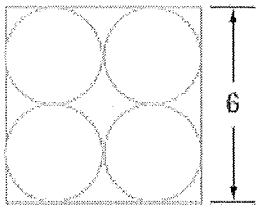
Name: _____

Find the area of each shaded region or polygon. Give answers as exact values (leave in radical form, fractions, and pi).

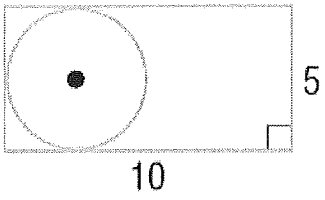
1.



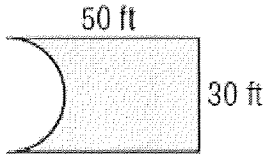
2.

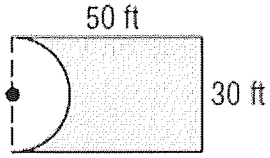


3.

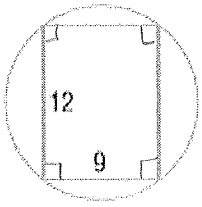


4. Choose one or the other





5.



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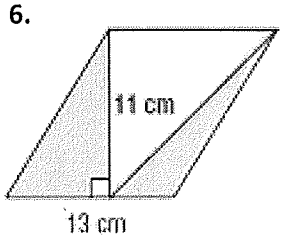

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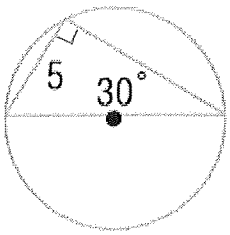

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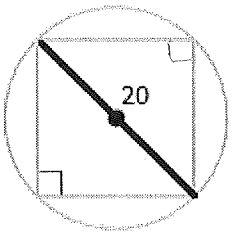

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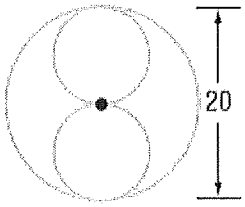

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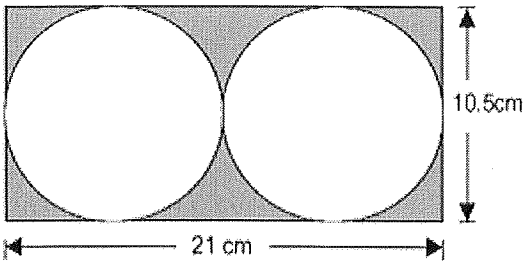
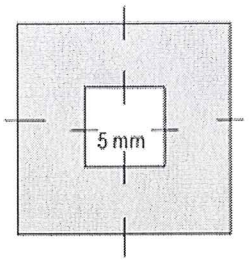


Homework (Th) – Shaded Regions

Name: Key

Find the area of each shaded region or polygon. Give answers as exact values (leave in radical form, fractions, and pi).

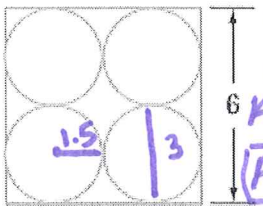
1.



$A = 15 \cdot 15 - 5 \cdot 5$

$A = 200 mm^2$

2.



A = square − 4 circles

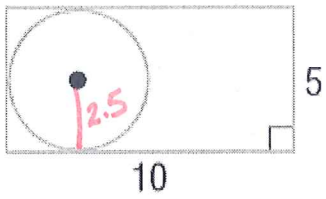
$A = b \cdot h - 4\pi r^2$

$A = 6 \cdot 6 - 4\pi 1.5^2$

$A = 36 - 9\pi$ units^2 exact values

$A \approx 7.73$ units^2

3.



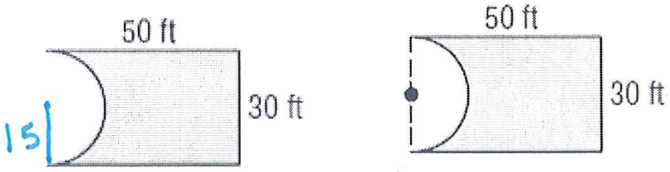
A = Rectangle − circle

$A = 10 \cdot 5 - \pi 2.5^2$

$A = 50 - 6.25\pi$ exact value

$A \approx 30.37$ units^2 rounded

4. Choose one or the other



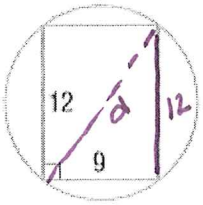
A = rectangle $-\frac{1}{2}$ circle

$A = 50 \cdot 30 - \frac{1}{2}\pi 15^2$

$A = 1500 - 112.5\pi$ ft^2 exact value

$A \approx 1146.57$ ft^2 rounded

5.



Find d and r

$9^2 + 12^2 = d^2$

$225 = d^2$

$15 = d$

$7.5 = r$

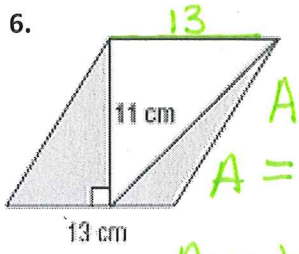
A = circle − rectangle

$A = \pi 7.5^2 - 12 \cdot 9$

$A = 56.25\pi - 108$ units^2 exact value

$A \approx 68.71$ units^2 rounded

6.



A = parallelogram − triangle

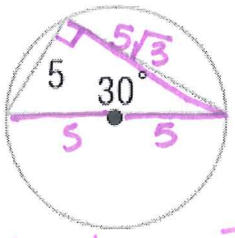
$A = \frac{1}{2} \cdot 11 \cdot 13 - 11$

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

$A = 13 \cdot 11 - \frac{1}{2} 13 \cdot 11$

$A = 71.5$ cm

7.



A = Circle − Triangle

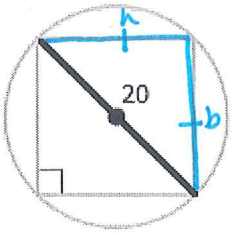
$A = \pi r^2 - \frac{1}{2} b \cdot h$

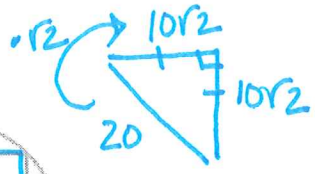
$A = \pi 5^2 - \frac{1}{2} \cdot 5 \cdot 5\sqrt{3}$

$A = 25\pi - 12.5\sqrt{3}$ units² exact values

$A \approx 56.89$ units² rounded

8.





20 = d

10 = r

A = Circle − Square

$A = \pi r^2 - b \cdot h$

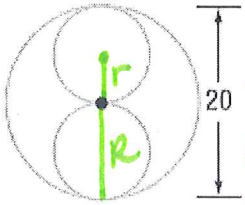
$A = \pi 10^2 - 10\sqrt{2} \cdot 10\sqrt{2}$

$A = 100\pi - 100\sqrt{4}$

$A = 100\pi - 200$ units²

$A \approx 114.16$ units²

9.



R = 10

r = 5

A = Circle − 2 circles

$A = \pi R^2 - 2\pi r^2$

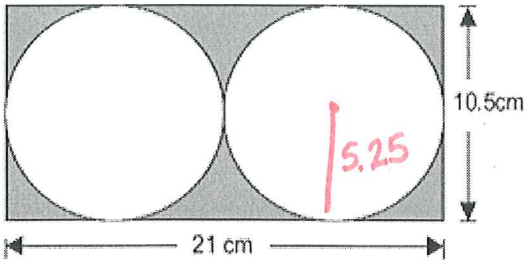
$A = \pi 10^2 - 2\pi 5^2$

$A = 100\pi - 50\pi$

$A = 50\pi$ units² exact Value

$A \approx 157.08$ units² rounded

10.



A = Rectangle − 2 circles

$A = b \cdot h - 2 \cdot \pi r^2$

$A = 21 \cdot 10.5 - 2\pi (5.25)^2$

$A = 220.5 - 55.125\pi$ cm² exact value

$A \approx 47.32$ cm² rounded