

Geometry 1 - BE Friday 3-4-11

SOLVE (EXACT ANSWERS)

① $2x^2 = 30 + 4x$

② $5x^2 = 9 - 6x$

① $2x^2 - 4x - 30 = 0$

$2(x^2 - 2x - 15) = 0$

Sum $\Rightarrow -2$

prod $\Rightarrow -15$

$+3 \quad -5$

$2(x-5)(x+3) = 0$

$x = \{5, -3\}$

✓ ✓

② $5x^2 + 6x - 9 = 0$

$a = 5$

$b = 6$

$c = -9$

$b^2 - 4ac$

$(6)^2 - 4(5)(-9)$

$36 + 180 = 216 = d$

$x = \frac{-b \pm \sqrt{d}}{2a}$

$x = \frac{-6 \pm \sqrt{216}}{10}$

$x = \frac{-6 \pm 6\sqrt{6}}{10}$

$x = \frac{-3 \pm 3\sqrt{6}}{5}$

$\sqrt{216}$

$\sqrt{216}$

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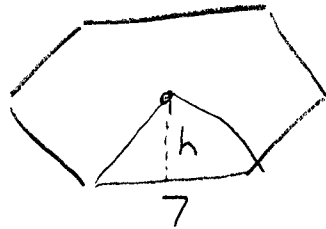
$\sqrt{216}$

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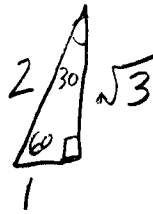
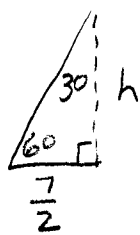
GEOMETRY - Homework Review - Pg 613
3, 6, 14, 19.

③ Area of Regular Hexagon - Perimeter = 42 yds

$$\frac{42}{6} = 7 \text{ yds per side}$$



Central Angle
 $\Rightarrow \frac{360}{6} = 60^\circ$



$$\therefore h = \frac{7}{2} \sqrt{3} = \frac{7\sqrt{3}}{2}$$

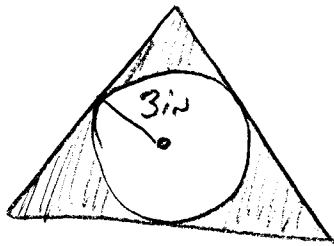
$$\therefore \text{Area} = \frac{1}{2} (42) \frac{7\sqrt{3}}{2} = \frac{21 \cdot 7\sqrt{3}}{2}$$

$$\boxed{\text{Area} = \frac{147\sqrt{3}}{2} \text{ yd}^2} \quad \text{EXACT}$$

$$A = 73.5(1.732) = 127.30 \approx \boxed{127.3 \text{ yd}^2}$$

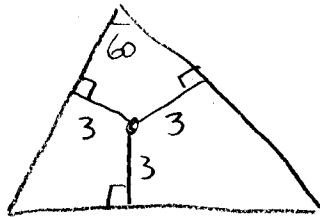
APPROXIMATE

⑥ Shaded area? EQUILATERAL Δ

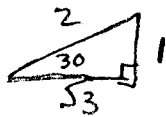
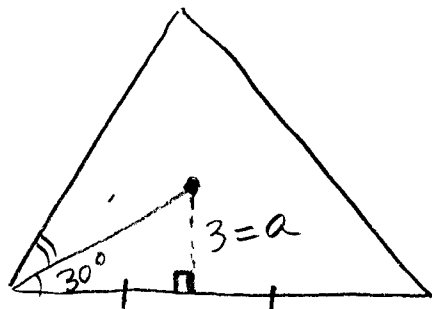


$$A_{\odot} = \pi(3)^2 = 9\pi \text{ in}^2$$

$A_{\Delta} \Rightarrow$



Angle bisectors meet at the incenter, $\Rightarrow 30^\circ$
Radius is perpendicular to tangent line.



$$\therefore X = 3\sqrt{3}$$

$$S = 6\sqrt{3}$$

$$P = 18\sqrt{3}$$

$$A_{\Delta} = \frac{1}{2} Pa$$

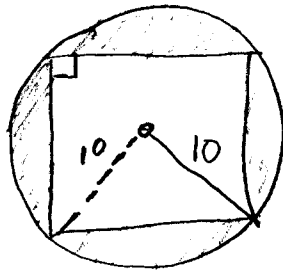
$$A_{\Delta} = \frac{1}{2} \cdot 18\sqrt{3} \cdot 3 = 27\sqrt{3} \text{ in}^2$$

$$\therefore A_{\text{SHADED}} = 27\sqrt{3} - 9\pi \text{ in}^2$$

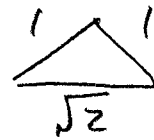
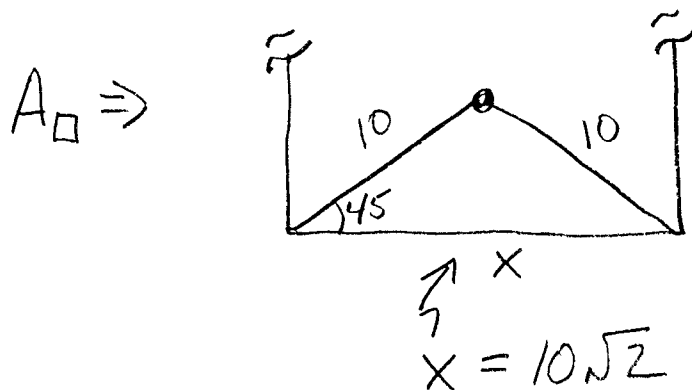
$$46.765 - 28.274 = 18.491$$

$$A_{\text{SHADED}} = 18.5 \text{ in}^2$$

⑭ $A_{\text{SHADED}} = ?$ Assume t_+



$$A_{\odot} = \pi(10)^2 = 100\pi \text{ units}^2$$



$$A_{\square} = (10\sqrt{2})(10\sqrt{2}) = (100)(2) = 200 \text{ units}^2$$

$$A_{\text{SHADED}} = 100\pi - 200$$

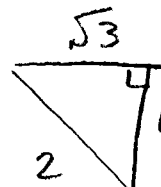
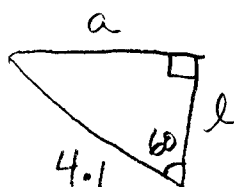
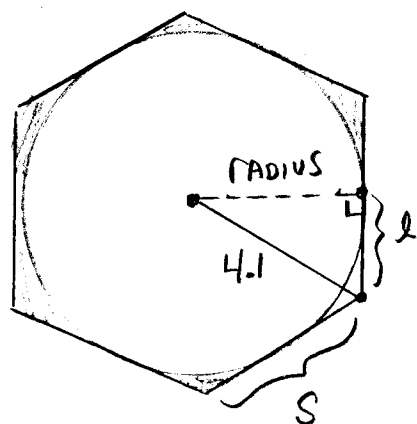
$$= 314.16 - 200$$

$$\approx 114.16$$

$$\boxed{A_{\text{SHADED}} \approx 114.2 \text{ units}^2}$$

①9 $A_{\text{SHADED}} = ?$ Assume regular hexagon

$$\frac{720}{6} = 120^\circ = \text{interior } \angle$$



$$l = 2.05 \therefore S = 4.1$$

$$a = 2.05\sqrt{3}$$

$$A_{\text{HEX}} = \frac{1}{2} P a = \frac{1}{2} (\underbrace{6 \cdot 4.1}_{P=6S}) \underbrace{2.05\sqrt{3}}_a$$

$$= 3(4.1)(2.05)\sqrt{3} = 25.215\sqrt{3} \text{ units}^2$$

$$A_{\circ} = \pi r^2 = \pi (2.05\sqrt{3})^2 = \pi (4.203)(3) \\ = 12.608 \pi \text{ units}^2$$

$$\therefore A_{\text{SHADED}} = 25.215\sqrt{3} - 12.608\pi \text{ units}^2 \\ = 43.674 - 39.609 \\ = 4.064$$

$$A_{\text{SHADED}} \approx 4.1 \text{ units}^2$$

Ch. 11-5 Geometric Probability

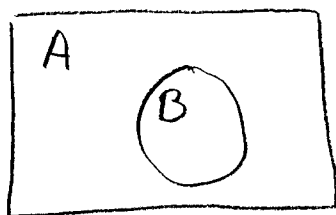
$$P(\text{event}) = \frac{\text{Number of successful outcomes}}{\text{total number}}$$

Geometric Probability

Could involve length, area, or volume.

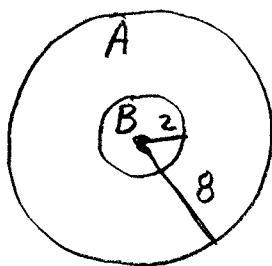
Area Example:

If a point in region A is chosen at random, the probability that the random point will be in region B is:



$$\frac{\text{Area of region B}}{\text{Area of region A}}$$

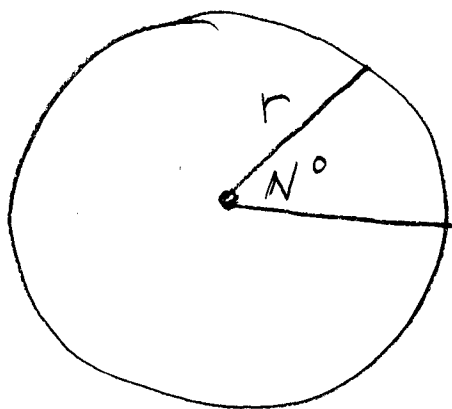
⊙ EX $P(\text{Region B}) = ?$



$$P(B) = \frac{\text{Area of B}}{\text{Area of A}} = \frac{\pi(2)^2}{\pi(8)^2} = \frac{4}{64} = \frac{1}{16}$$

$$P(B) = \frac{1}{16} = 6.25\%$$

Area of A Sector of A circle:



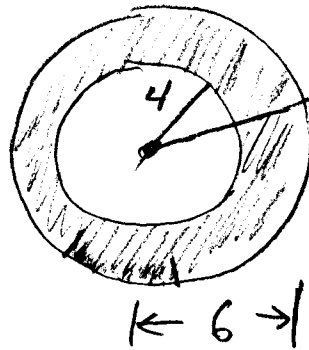
$$A = \left(\frac{N}{360} \right) \pi r^2$$

EX2
PG623

Area of sector if central angle is 46°
and $r = 6$

$$A = \frac{46}{360} (\pi(6)^2) = \frac{46 \cdot 36^\circ \cdot \pi}{360} = 4.6\pi \text{ UNITS}^2$$

ⓧ Find the shaded area

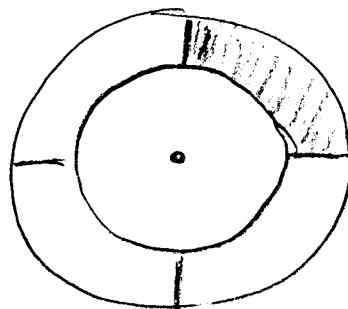


$$A_{\odot} = \pi 6^2$$

$$A_{\odot} = \pi 4^2$$

$$36\pi - 16\pi = \boxed{20\pi \text{ UNITS}^2 = A_{\text{SHADE}}}$$

If the SHADED AREA WAS DIVIDED
into 4 equal segments, the
Area of EACH would be $\frac{20\pi}{4} = 5\pi$
UNITS²



Geometry 1 Homework

Name: _____

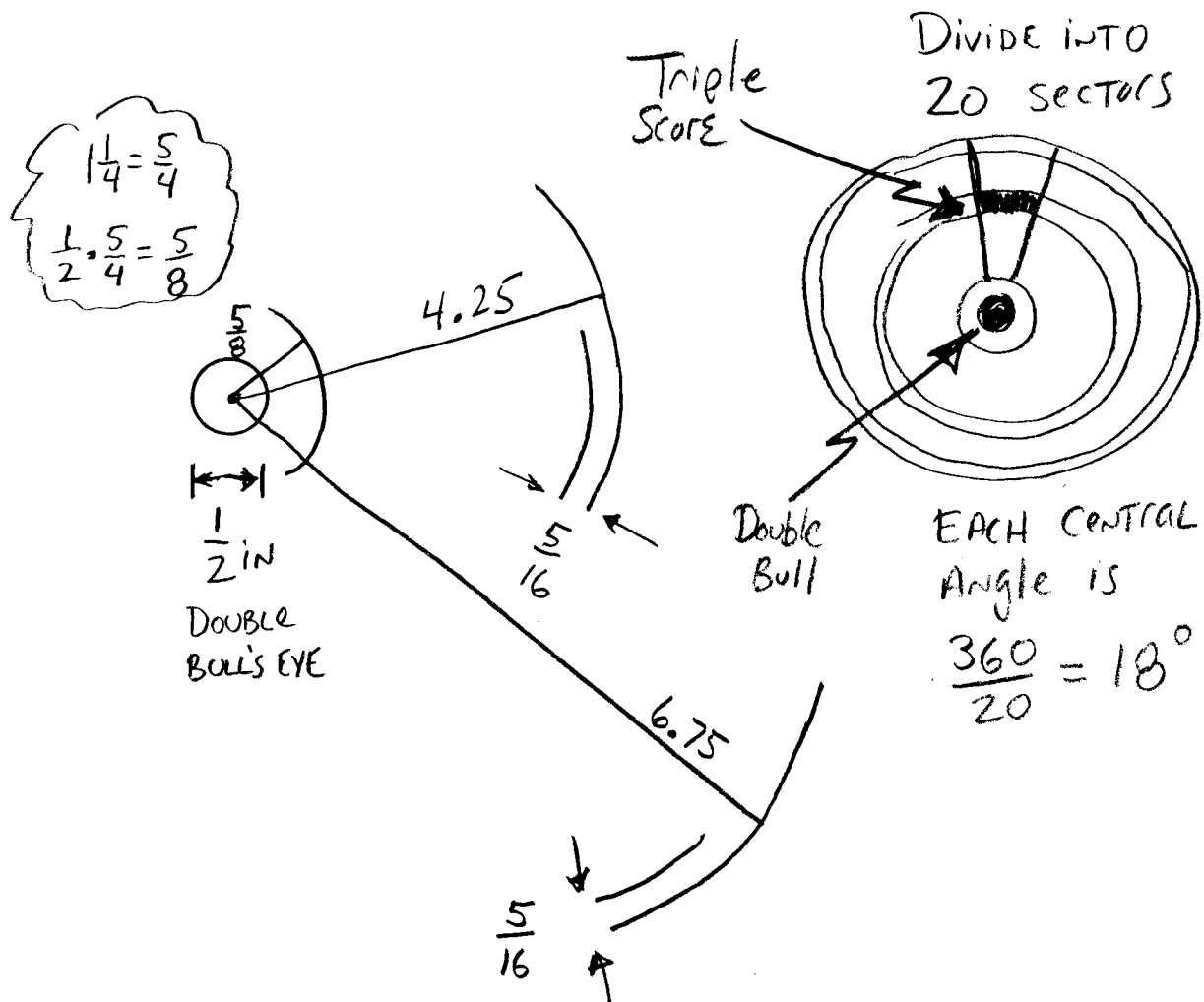
Per. _____

For the bull's-eye a small circle with a diameter of half an inch at the center of the board. This is the inner bull's-eye. Next, mark a slightly larger circle around this one with a diameter of 1.25 inches. This is the outer bull's-eye. The inner bull's-eye is generally colored black and the outer is colored red.

Next, mark out a larger circle by measuring 4.25 inches from the center of the board. This will be the outer edge of your triple-score band. Mark a thin band with a width of 8mm (or $\frac{5}{16}$ of an inch) inside this circle. This is the triple score ring.

Finally, do the same with a larger circle measured out 6.75 inches from the center of the board. Another ring, with a width of 8mm will complete the double-score ring and finish the layout of your dartboard.

Next, divide the board into 20 equal sections, radiating out from the bull's-eye. The bull's-eye is not divided, but the double and triple rings are. Each slice of the board has a particular number assigned to it, with the slice on the top always marked as 20.



Compare the area of the double bull and triple score - which is harder to hit and why??