Geometry 1-BE

Friday 3-2-12

SOLVE:

① $\begin{cases} y = -4x \\ 2y + 3x = 8 \end{cases}$

② $3x + 5y = 7$
$4x + 2y = 0$

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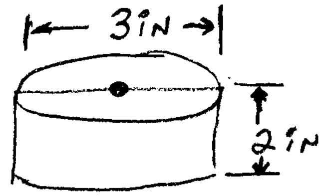
③ FIND THE SURFACE AREA (EXACT):



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① $y = -4x$

$2y + 3x = 8$

$-8x + 3x = 8$

$-5x = 8$

$x = -\frac{8}{5}$

$\therefore y = -4 \cdot -\frac{8}{5}$

$y = \frac{32}{5}$ → $\left(-\frac{8}{5}, \frac{32}{5}\right)$

② $3x + 5y = 7 \xrightarrow{-(2)} -6x - 10y = -14$

$4x + 2y = 0 \xrightarrow{(5)} 20x + 10y = 0$

$14x = -14$

$x = -1$

$\therefore 4(-1) + 2y = 0$

$-4 + 2y = 0$

$2y = 4$

$y = 2$

$\therefore (-1, 2)$

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③ BASE ⇒ $\pi r^2 = \pi\left(\frac{3}{2}\right)^2 = \frac{9}{4}\pi$ per base ⇒ $\frac{18}{4} = \frac{9}{2}\pi$

SIDE ⇒ $2\pi r \cdot h = \left(2\pi \frac{3}{2}\right)2 = 6\pi = \frac{12\pi}{2}$ ⇒ $\frac{21}{2}\pi \text{ in}^2$

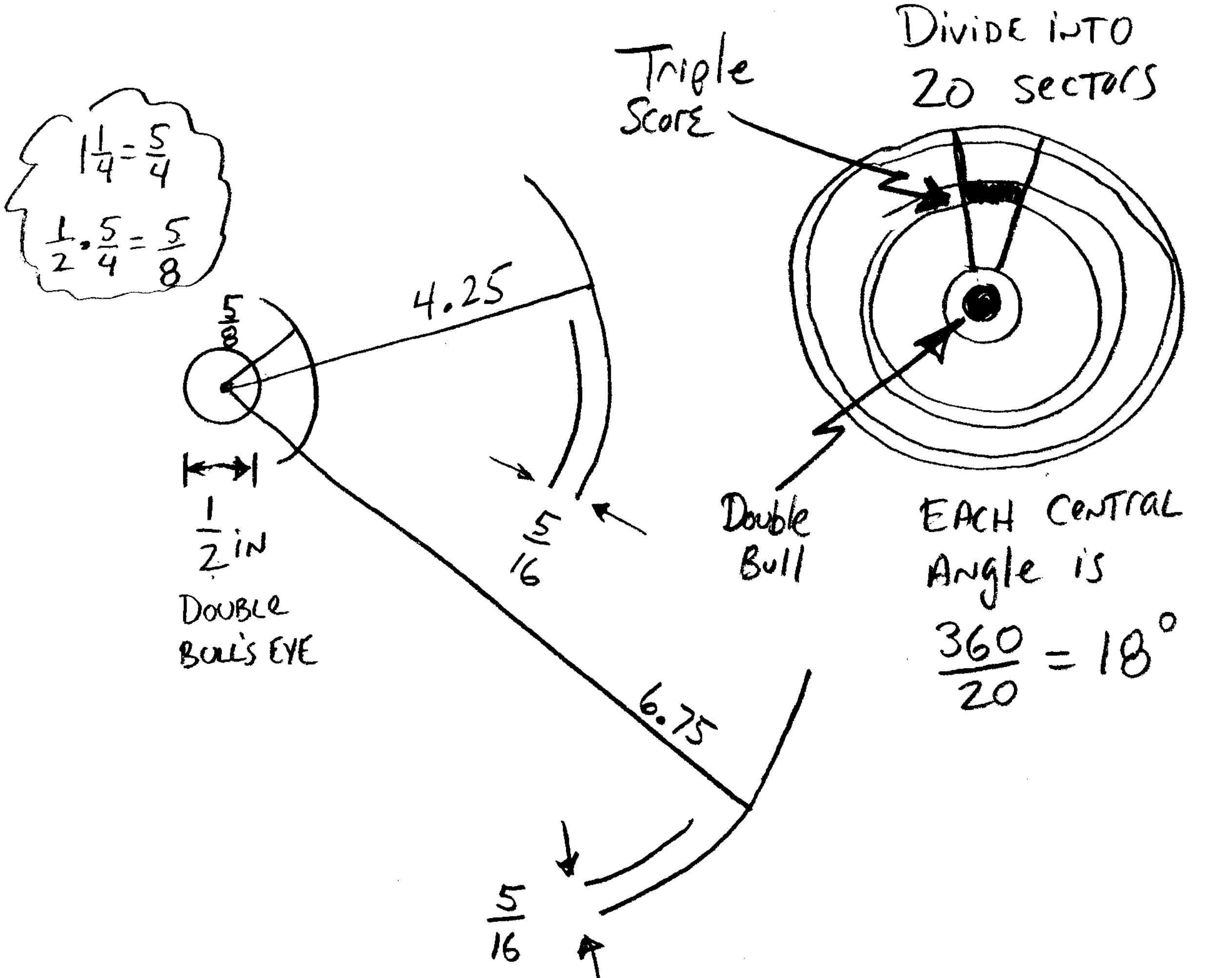
Geometry I Homework Name: Key Per. N/A

For the bull's-measure 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 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??

Area of Double Bull

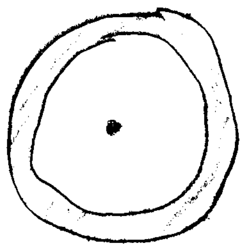
$$A_{\odot} = \pi r^2 = \frac{\pi d^2}{4} = \frac{\pi\left(\frac{1}{2}\right)^2}{4}$$

Bull's Eye

$$A_{\odot} = \frac{\pi \cdot \frac{1}{4}}{4} = \boxed{\frac{\pi}{16}\text{ in}^2} \text{ or } \boxed{\cong 0.1963\text{ in}^2}$$

EXACT — APPROXIMATE

Area of Triple Score



$A_{\text{Big circle}} - \text{Area}_{\text{small circle}}$ is Area of Triple Ring

$$\pi\left(4\tfrac{1}{4}\right)^2 - \pi\left(\frac{17}{4} - \frac{5}{16}\right)^2$$

$$\pi\left(\frac{17}{4}\right)^2 - \pi\left(\frac{68}{16} - \frac{5}{16}\right)^2$$

$$\frac{289}{16}\pi - \pi\left(\frac{63}{16}\right)^2$$

$$\frac{289}{16}\pi - \frac{3969}{256}\pi = \left(\frac{4624}{256} - \frac{3969}{256}\right)\pi$$

$$= \frac{655}{256}\pi\text{ in}^2 = \text{Area of triple Ring}$$

Divide by 20 to get area of ONE triple

$$\frac{655}{256 \cdot 20}\pi = \frac{655}{5120}\pi = \boxed{\frac{131}{1024}\pi} \approx .1279\pi \approx \boxed{.4019\text{ in}^2}$$

EXACT — Triple Score

The Triple Score Area is larger and should be be worth less points. Triple 20 = 60 BullsEye = 50!

Ch. 12-1 Three Dimensional Figures

1D = (length)^1 (Ex) cm^1, ft^1, in^1

2D = (length)^2 = Area (Ex) cm^2, ft^2, in^2

3D = (length)^3 = Volume (Ex) cm^3, ft^3, in^3

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polyhedron — A (3D) solid with all flat surfaces that enclose a single region of space. Each flat surface (face) is a polygon.

Edges — Lines where faces intersect.

Orthogonal drawing — A two-dimensional (flat) view of a three-dimensional object showing top, left-right, and front sides of an object

perspective view — A view of a three-dimensional object (on a flat surface) that shows the object as it appears from a corner (off to the side)

isometric paper — paper with 3 parallel rows of dots or lines to show length, height, depth.

EX 1
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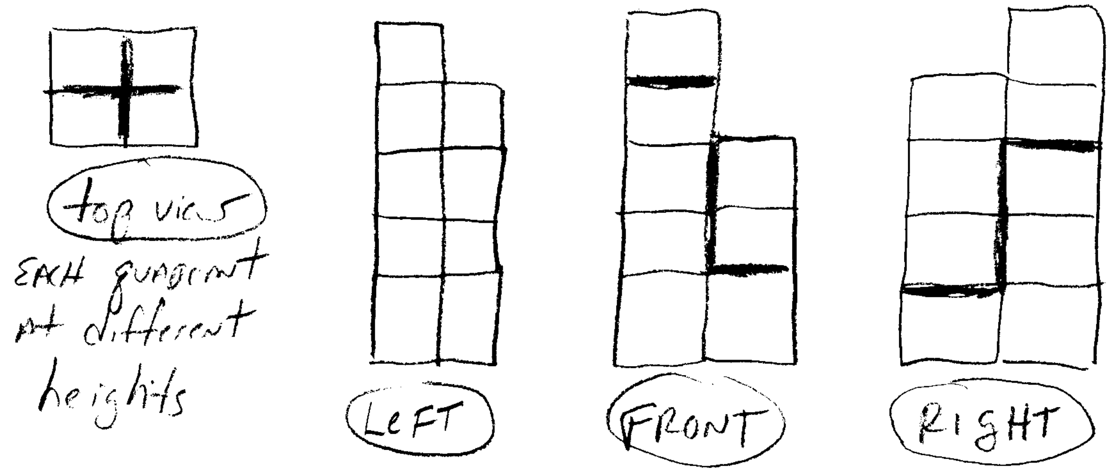
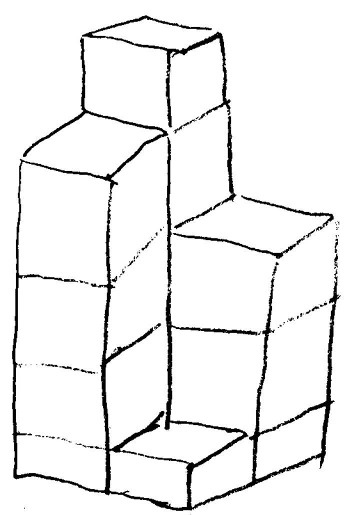
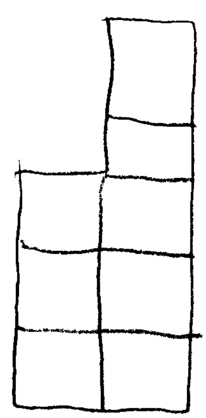
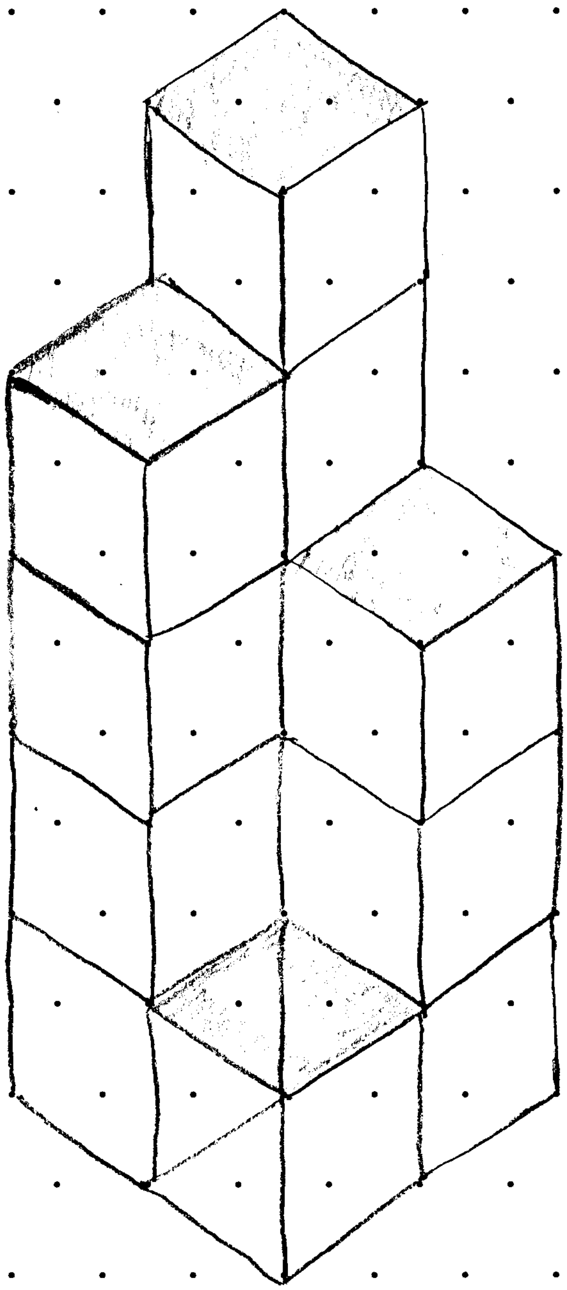
NOTE: darker lines in the orthoganal drawing indicate "breaks" in the object.





WHAT DOES THE BACK VIEW LOOK LIKE?





ISOMETRIC PAPER
½ inch dots

Prism — A polyhedron with one pair of parallel faces = bases. And the remaining faces are parallelograms.

A prism is named by the shape of its bases, ex) triangular prism, rectangular prism.

Regular prism — A prism with bases that are regular polygons. ex) cube or a square prism.

Right prism — A prism with faces perpendicular to the bases.

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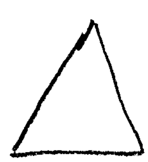
vertex — point where one or more edges meet.

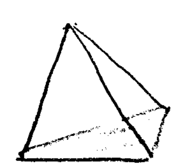
The fewest sides in a polyhedron is...

4 ⇒



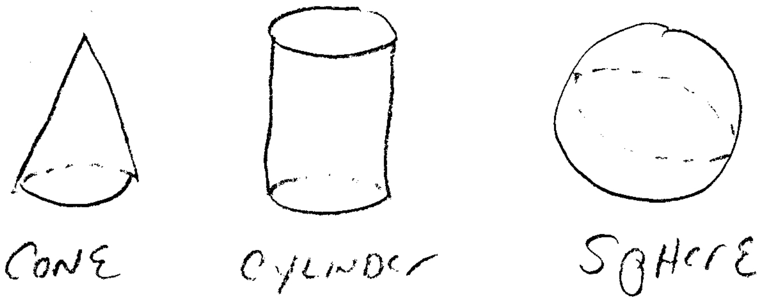
simplist polygon

⇒ ADD 3 SIDES then a bottom

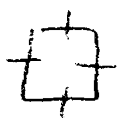
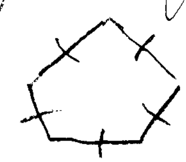


Tetrahedron

THE FOLLOWING ARE NOT polyhedrons.
Why not?



All SIDES ARE NOT POLYGONS!

THERE ARE ONLY 5 REGULAR polyhedrons.
(MUST USE  or  or  ETC.)

Named the PLATONIC SOLIDS AFTER PLATO.

- NEED AT least 3 polygons AT EACH VERTEX to form A 3-D figure
- total degrees AT A VERTEX MUST BE $<360^\circ$

~~TRIANGLE~~ EQUILATERAL TRIANGLE

$3 \cdot 60 = 180$
tetrahedron – 4 faces

$4 \cdot 60 = 240$
octahedron – 8 faces

$5 \cdot 60 = 300$ – 20 faces
icosahedron

SQUARE

$3 \cdot 90 = 270^\circ$
CUBE
6 faces

PENTAGON

$3 \cdot 108 = 324^\circ$
dodecahedron
12 faces

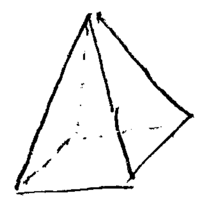
- WEB VIEWS
- FAIR DICE FROM EACH

Finally –

Pyramid — A polyhedron with all faces except one meeting at a point. Named after bases.

NOT a prism

Egyptian pyramids are square pyramids.



Homework: Pg 639 #1–8
