

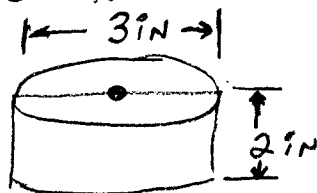
Geometry 1-BE | MONDAY 3-7-11

Solve:

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

$$\textcircled{2} \begin{cases} 3x + 5y = 7 \\ 4x + 2y = 0 \end{cases}$$

$\textcircled{3}$ Find the surface area (EXACT):



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

$$-8x + 3x = 8$$

$$-5x = 8$$

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

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

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

$$\textcircled{2} \begin{aligned} 3x + 5y &= 7 \xrightarrow{(2)} -6x - 10y = -14 \\ 4x + 2y &= 0 \xrightarrow{(5)} 20x + 10y = 0 \end{aligned}$$

$$14x = -14$$

$$x = -1$$

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

$$-4 + 2y = 0$$

$$2y = 4$$

$$y = 2$$

$$\therefore (-1, 2)$$

$$\textcircled{3} \text{ Base } \Rightarrow \pi r^2 = \pi \left(\frac{3}{2}\right)^2 = \frac{9}{4} \pi \text{ per base } \Rightarrow \frac{18}{4} = \left(\frac{9}{2}\right) \pi$$

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

Geometry 1 Homework

Name: _____

Key

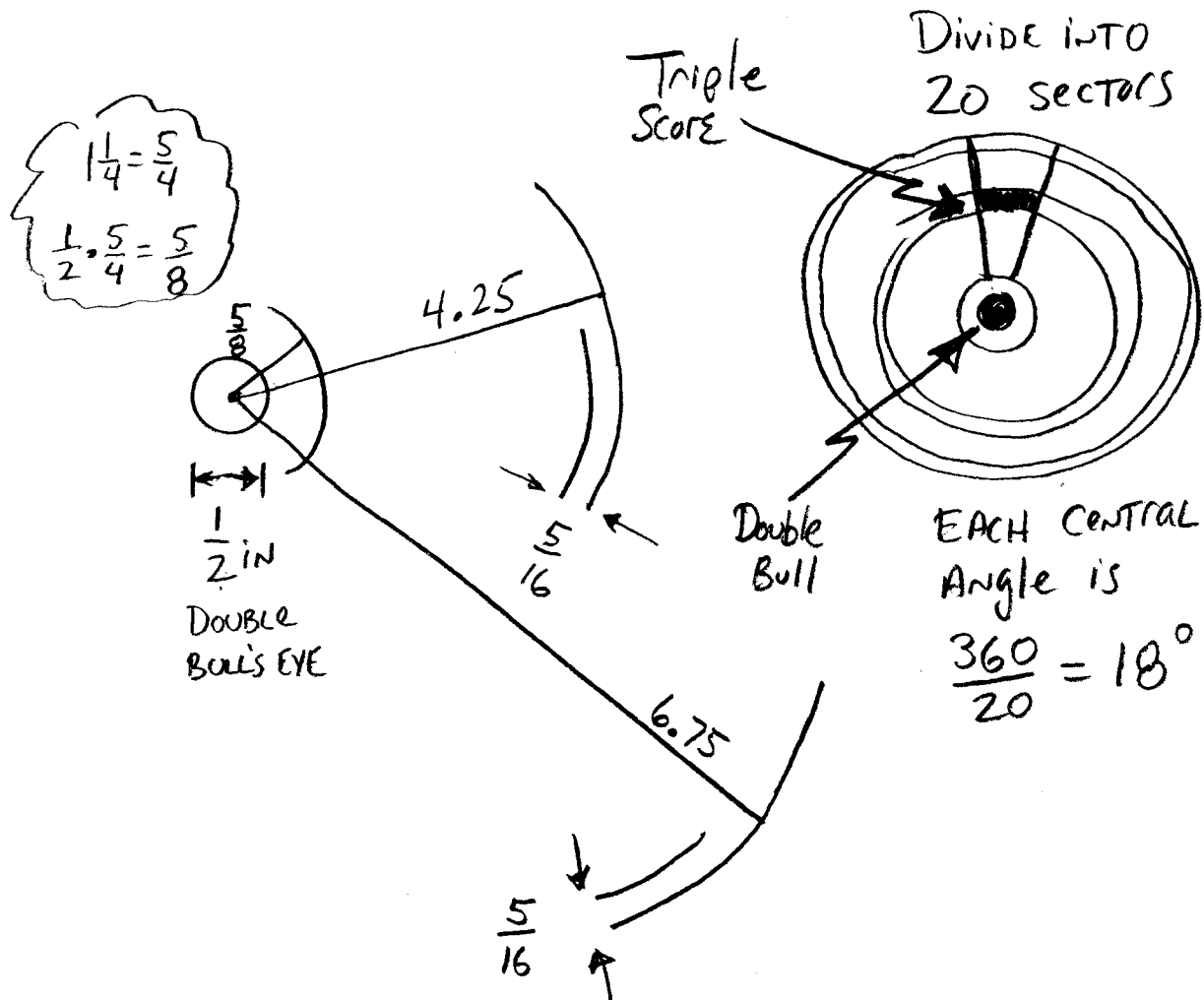
Per. N/A

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??

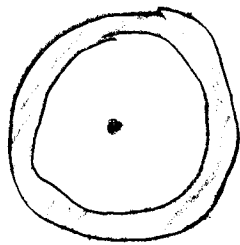
Area of Double Bull

$$A_0 = \pi r^2 = \frac{\pi d^2}{4} = \frac{\pi \left(\frac{1}{2}\right)^2}{4}$$

$$A_0 = \frac{\pi \cdot \frac{1}{4}}{4} = \frac{\pi \text{ in}^2}{16} \quad \text{or} \quad \overset{\text{Bull's Eye}}{\approx 0.1963 \text{ in}^2}$$

EXACT APPROXIMATE

Area of Triple Score



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

$$\pi \left(\frac{41}{4}\right)^2 - \pi \left(\frac{17}{4} - \frac{5}{16}\right)^2$$

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

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

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

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

Divide by 20 to get Area of ONE triple

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

The Triple Score Area is larger and should be be worth less points. Triple 20 = 60 Bull's Eye = 50!

Ch. 12-1 Three Dimensional Figures

1D = (length)' (EX) cm', ft', in'

2D = (length)² = Area (EX) cm², ft², in²

3D = (length)³ = VOLUME (EX) cm³, ft³, in³

polyhedron ^(3D) A SOLID WITH ALL FLAT SURFACES that enclose a single region of space. Each flat surface is a POLYGON.
(FACE)

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**

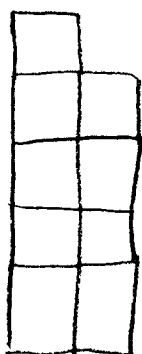
paper with 3 parallel rows of dots or lines to show length, height, depth.

EX1
PG636

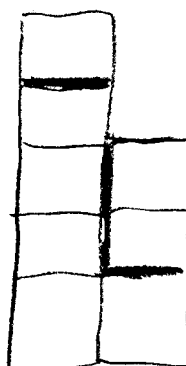
NOTE: darker lines in the orthogonal drawing indicate "breaks" in the object.



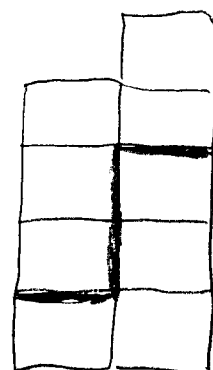
top view
each segment
at different
heights



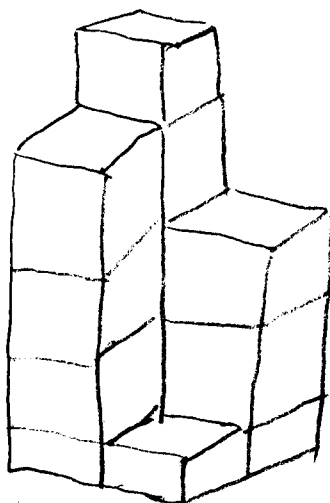
LEFT



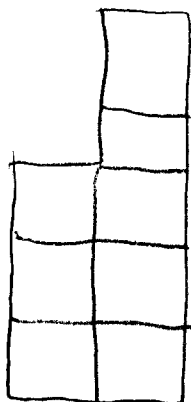
FRONT

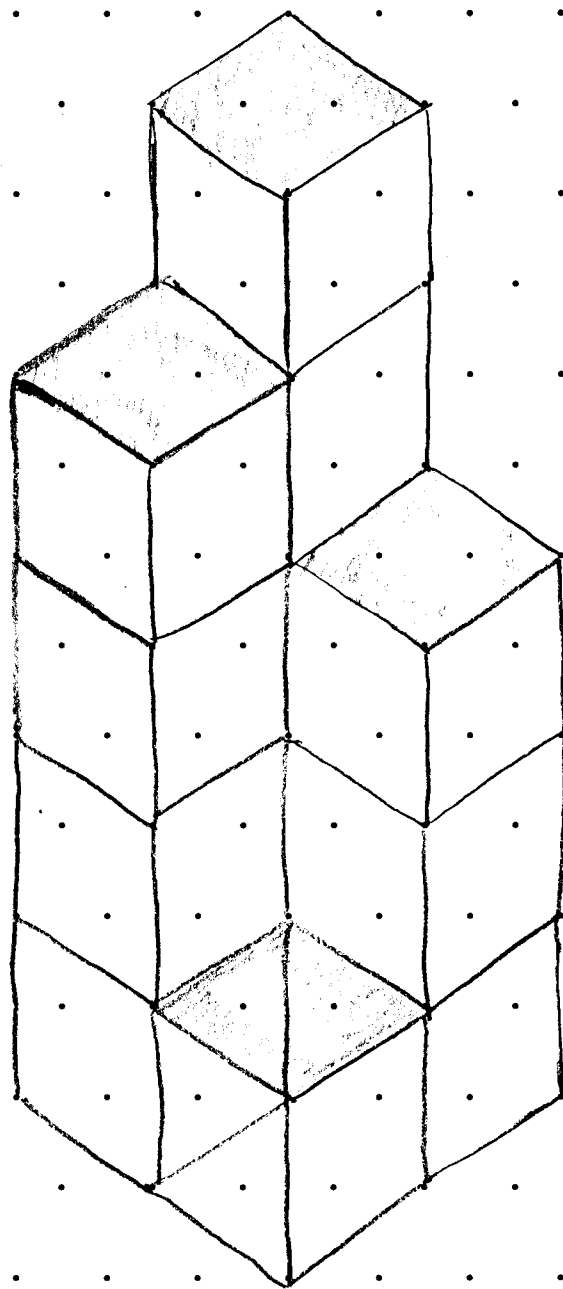


RIGHT



WHAT DOES THE BACK VIEW LOOK LIKE?





ISOMETRIC PAPER
 $\frac{1}{2}$ inch dots

4

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

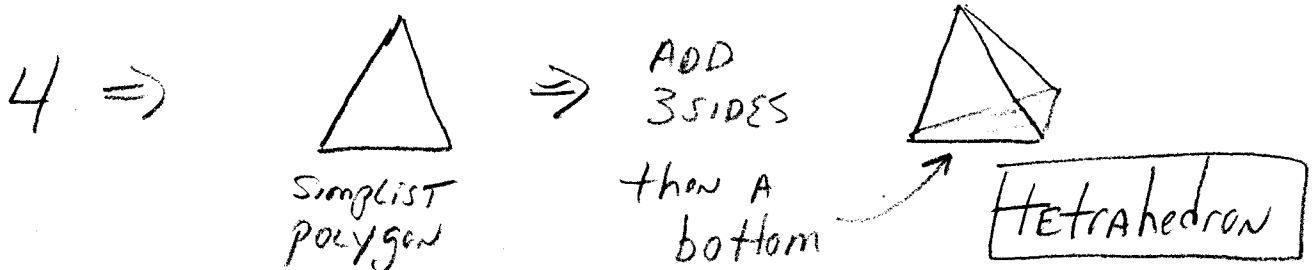
A prism is named by the shape of its bases, ex) triangular prism, rectangular prism.

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.

Vertex point where one or more edges meet.

The fewest sides in a polyhedron is...



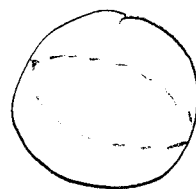
The following ARE NOT polyhedrons.
Why not?



CONE



CYLINDER



SPHERE

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 $< 360^\circ$

EQUILATERAL
TRIANGLE

$$3 \cdot 60 = 180$$

tetrahedron - 4 faces

$$4 \cdot 60 = 240$$

octahedron - 8 faces

$$5 \cdot 60 = 300$$

icosahedron - 20 faces

SQUARE

$$3 \cdot 90 = 270$$

CUBE
6 faces

PENTAGON

$$3 \cdot 108 = 324$$

dodecahedron
12 faces

- WEB VIEWS
- FAIR DICE FROM EACH

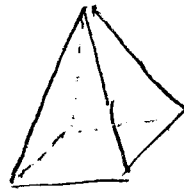
Finally -

Pyramid

NOT a prism

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

Egyptian pyramids are square pyramids.



Homework: Pg 639 #1-8
