


Geometry: Circles, cylinders, spheres

Monday, April 13

Please be at the math hangout every day this week.

In your bag of math things is a ruler and piece of string. The idea is for you to use this like a tape measure. Measure around things with the string and then hold the string to the ruler to see the actual measurement. If you have an actual tape measure at home, you may of course use that.

Find 5 cylinders that you can measure both across and around. Measure them and record your measurements in the chart below.

Item to be measured and a sketch of it	Distance across the top from rim to rim through the center: Diameter	Distance around the outside of the cylinder: Circumference
[example] My straight sided coffee mug 	3.25 inches	10.2 inches
Look at these measurements and using comparison language, tell what you notice about them.	The diameter seems to be _____ many times more or less than the Circumference.	The circumference seems to be _____ many times more or less than the diameter.

Think about what number you just proved.

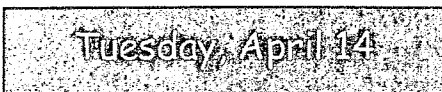
Post a pic of your chart on the learning board.

On the learning board are 3 videos to watch in case you didn't discover this while working through the chart.

To wrap up today, type a statement about the relationship between the circumference and the diameter of literally EVERY circle in the universe.

Also, write an equation or two that can be used to find one of these measurements IF you know the other.

Now sing!! Pie is so much better than cake!!



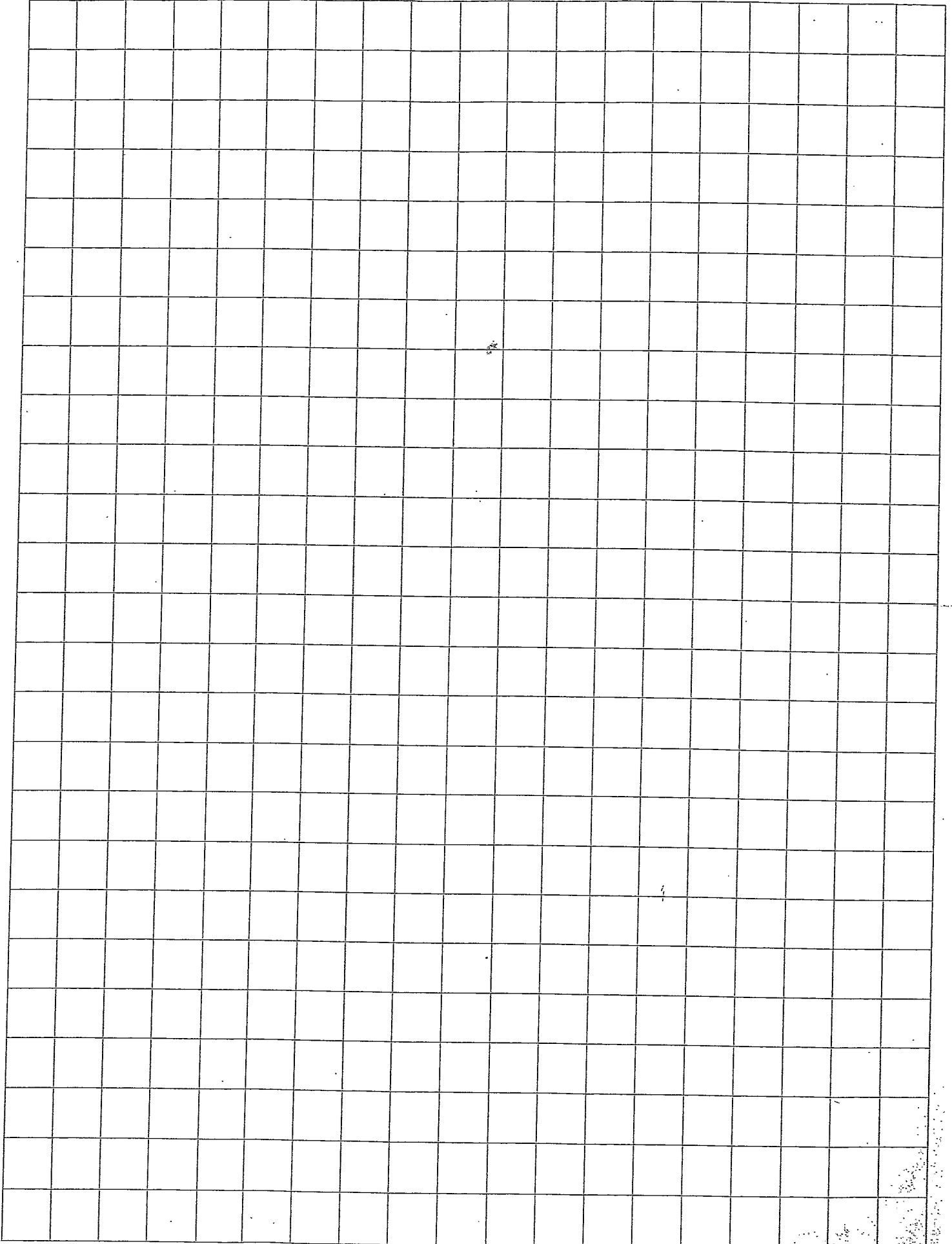
Please be at the math hangout at 10 every day this week. Ms. Kostuch is holding help sessions at 9:30 that you can also go to if you need more explanation than what has been given.

Today you are going to design a box for the Rawlings Company that they can put 2 balls in such that they can sell 2 at a time. The company wants the balls to fit snugly into a box that can be easily stacked on shelves in a store.

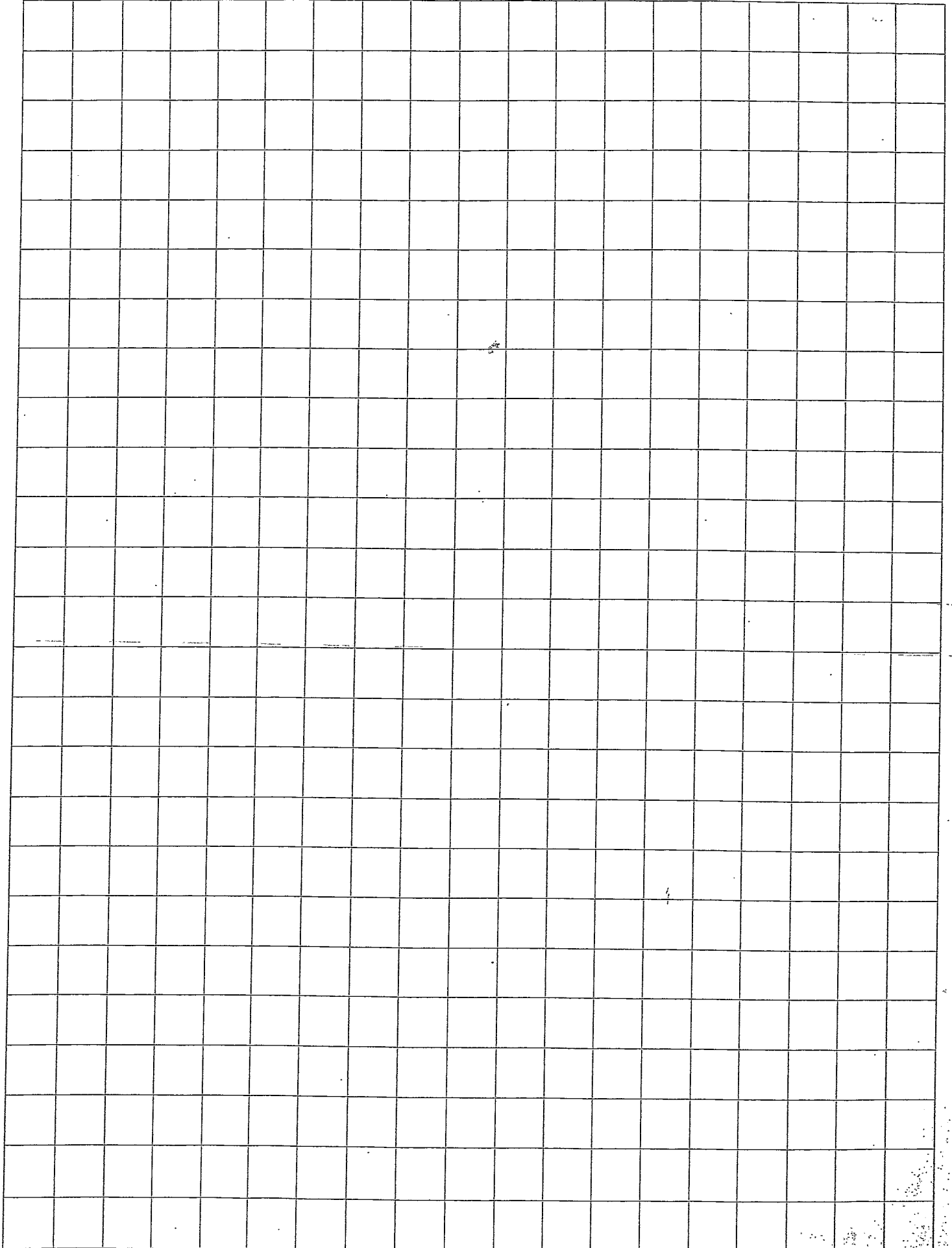
Look at a ball. [This is your look at spheres] What can you easily measure? Measure it.

What do you need to know in order to make a box the right size to hold a ball snugly so it can't move around? How can you find that measurement with a ball? You may NOT destroy the ball to find the needed measurement. These are the questions we are going to discuss at our 10:00 am meet.

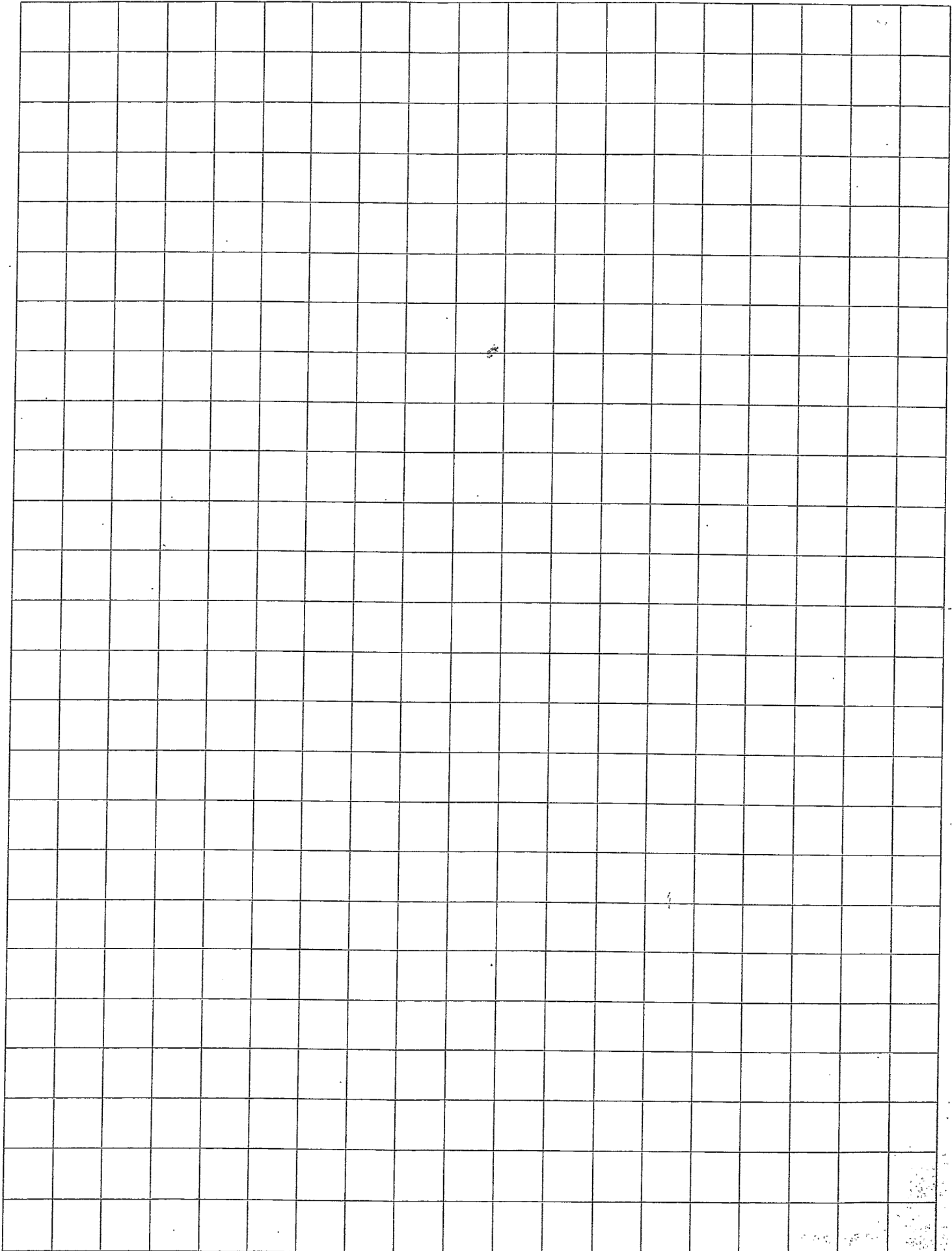
ONE-CENTIMETER GRAPH PAPER



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For your work today, you are going to find a ball at your house (tennis, golf, baseball) and design a box to hold it snugly. Make that box. Use your ruler to measure, make a net of your own, and have it close! (cover too) Then make it for 2 balls. They still need to fit snugly, touching the sides and each other.

Post a picture of your boxes on your google math doc. Then answer these questions:

1. What is the measurement you needed?
2. How did you find that measurement?
3. Does your box meet the requirements—2 balls fit snugly? What did you notice you needed to change when moving from the box holding 1 box v 2?

Wednesday, April 15

Google Hangout at 10:00

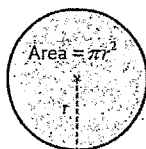
Tutor time with Ms. K at 9:30

Today's topic: AREA of a circle.

Draw 3 different sized circles. (Trace around something, use a compass, be accurate:

1. Measure and label the diameter, the radius and the circumference.
2. Find the area in square units by using the formula for Area of a Circle:

Area of Circle



3. Post pictures of your page OR do the circles on the google math doc.

You choose what works for you. Share your work with 3 classmates.

Comment on each other's work. Kindly, nicely, digital citizens.

Thursday, April 16

Google Hangout at 10:00

Surface Area: A 2-D measurement of a 3-D shape.

Start by looking at a couple of the nets for cylinders. What do you notice about the bases? What do you notice about the part in between the bases?

Write down the measurements of the parts of the cylinder nets:

Circular base diameter:

Circular base radius:

Circular base circumference:

Calculate the area of the base:

Now look at the rectangle that goes between the 2 bases. Measure it and find the area:

Now cut this out and make the cylinder.

Why did I have you find the area of each piece before you made the cylinder? Can you do it after?

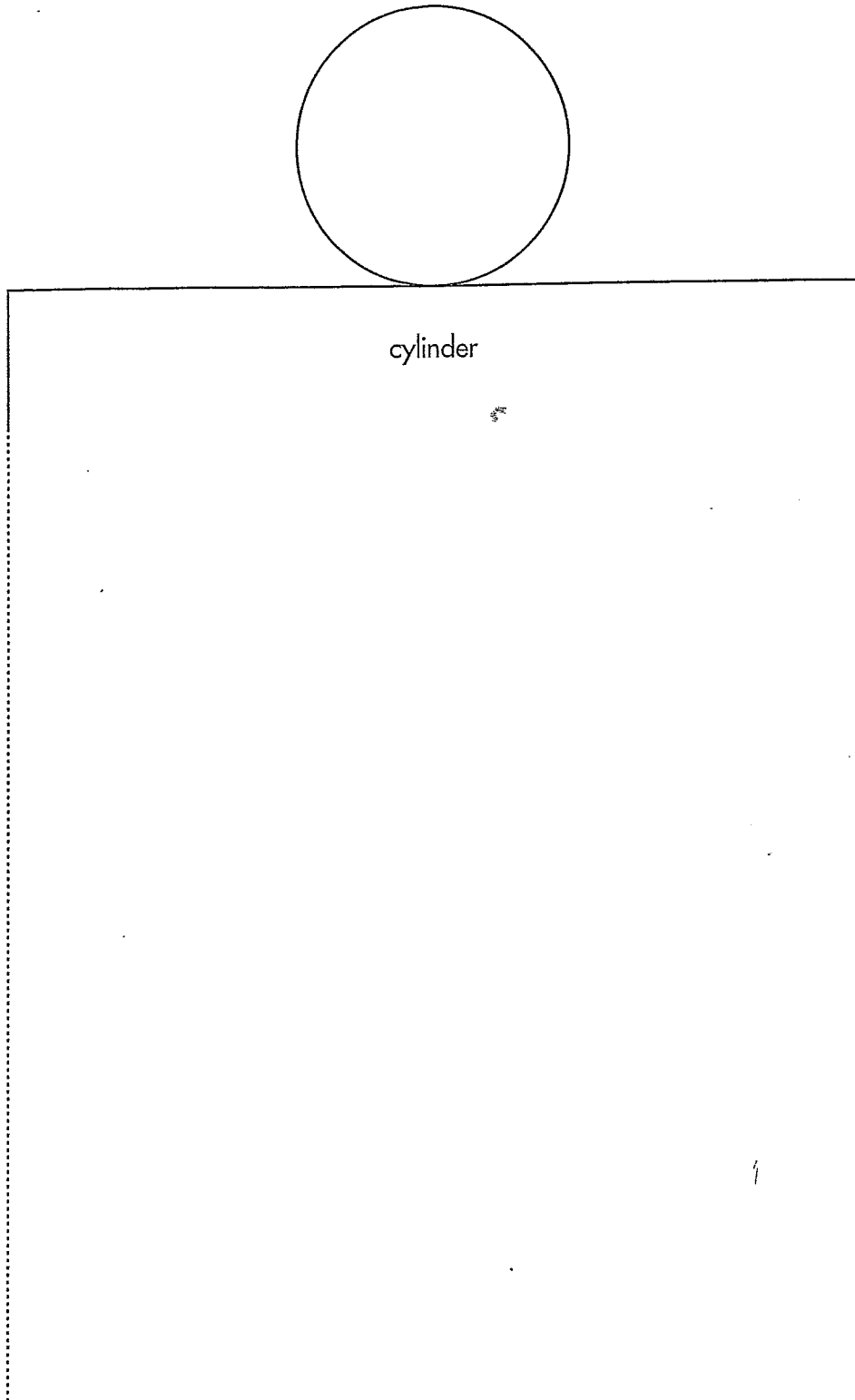
With the measurements above, find the surface area of the cylinder you just made. Write it here:

[note: use the same procedure you use to find the surface area of a box]

Finally, What would you need to do if this cylinder had a cover?

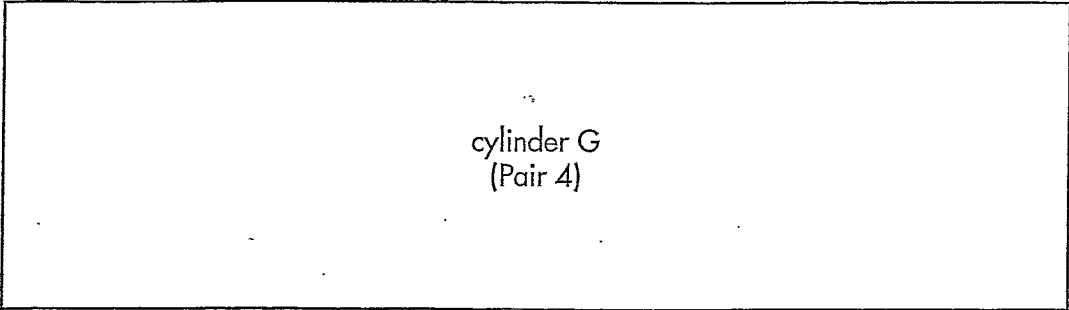
Take a picture of your cylinder. Post it on your google doc and report what you got for all your measurements. Answer the questions on the doc and write directions on what needs to be done to find the surface area of a cylinder. Can you do another

CYLINDER PATTERN

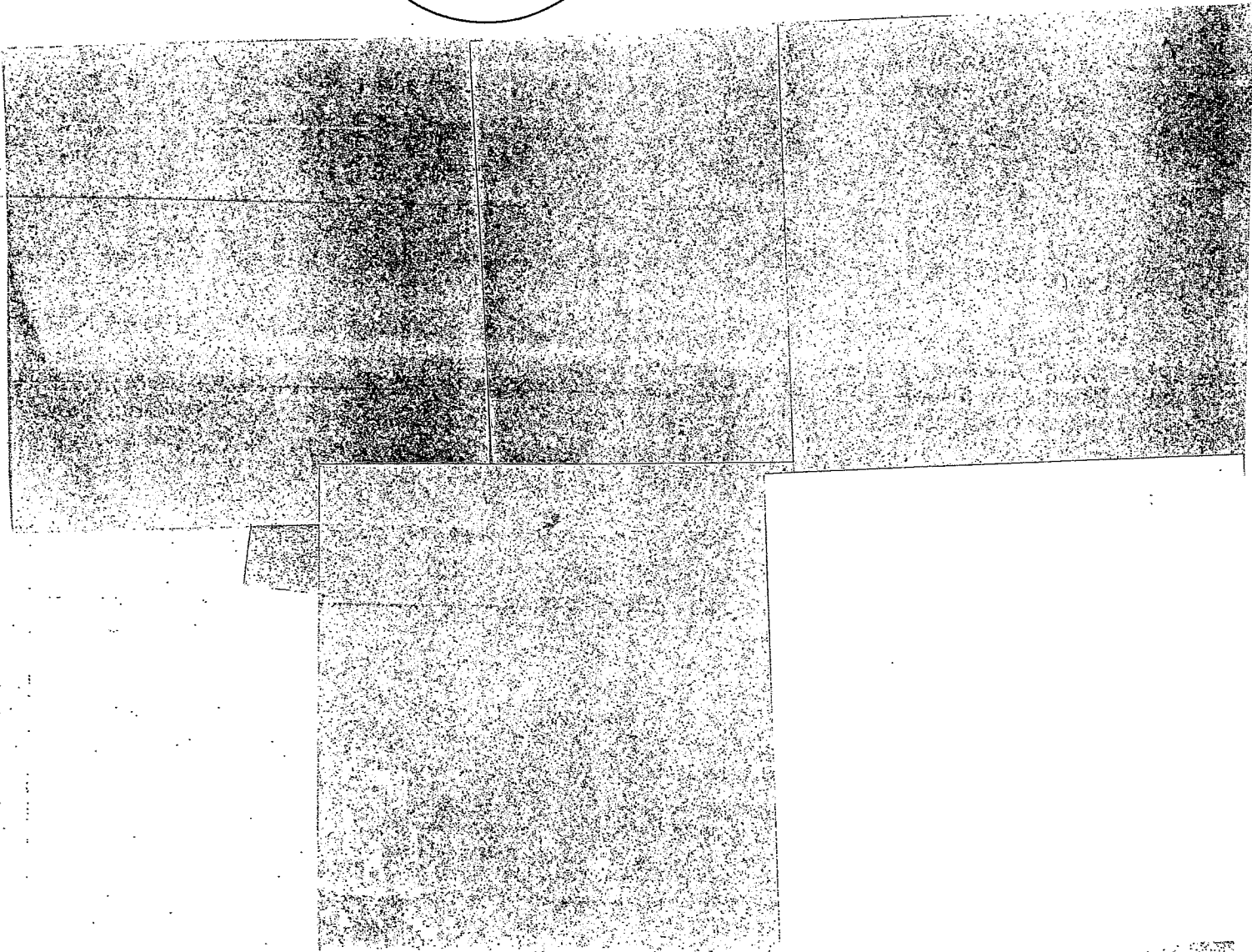
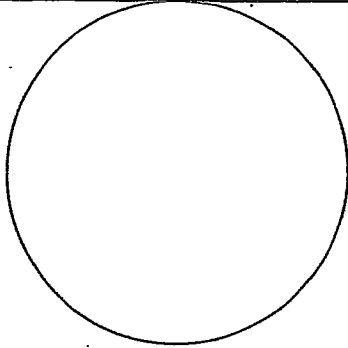


cylinder

SOLID PATTERNS G, J, AND K

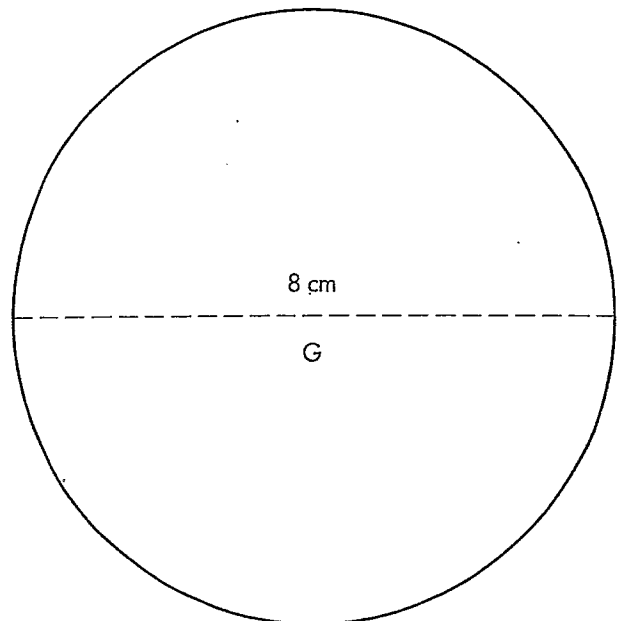
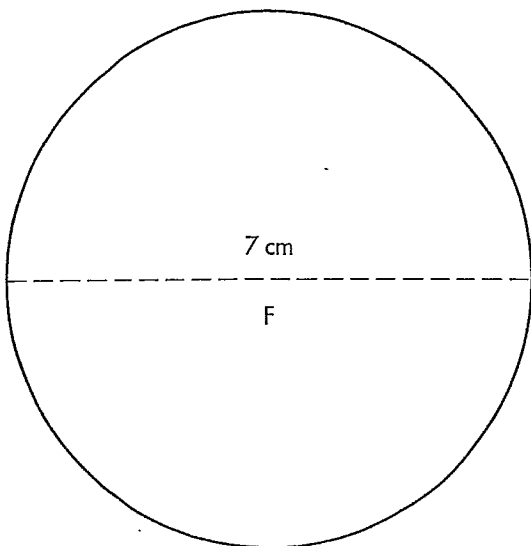
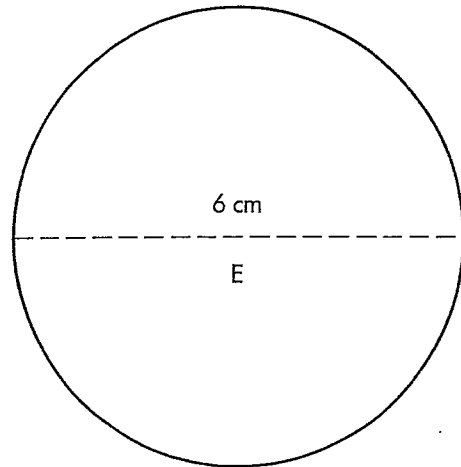
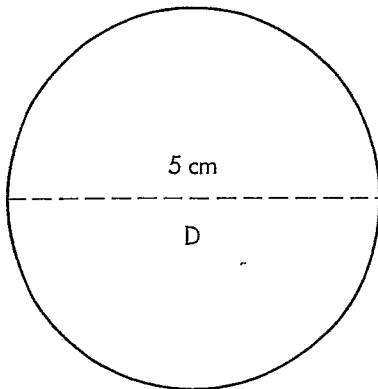
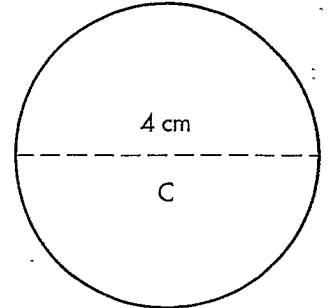
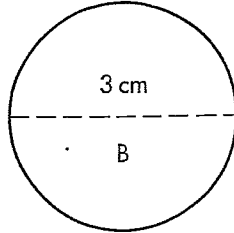
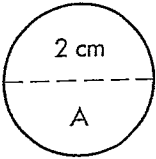


cylinder G
(Pair 4)



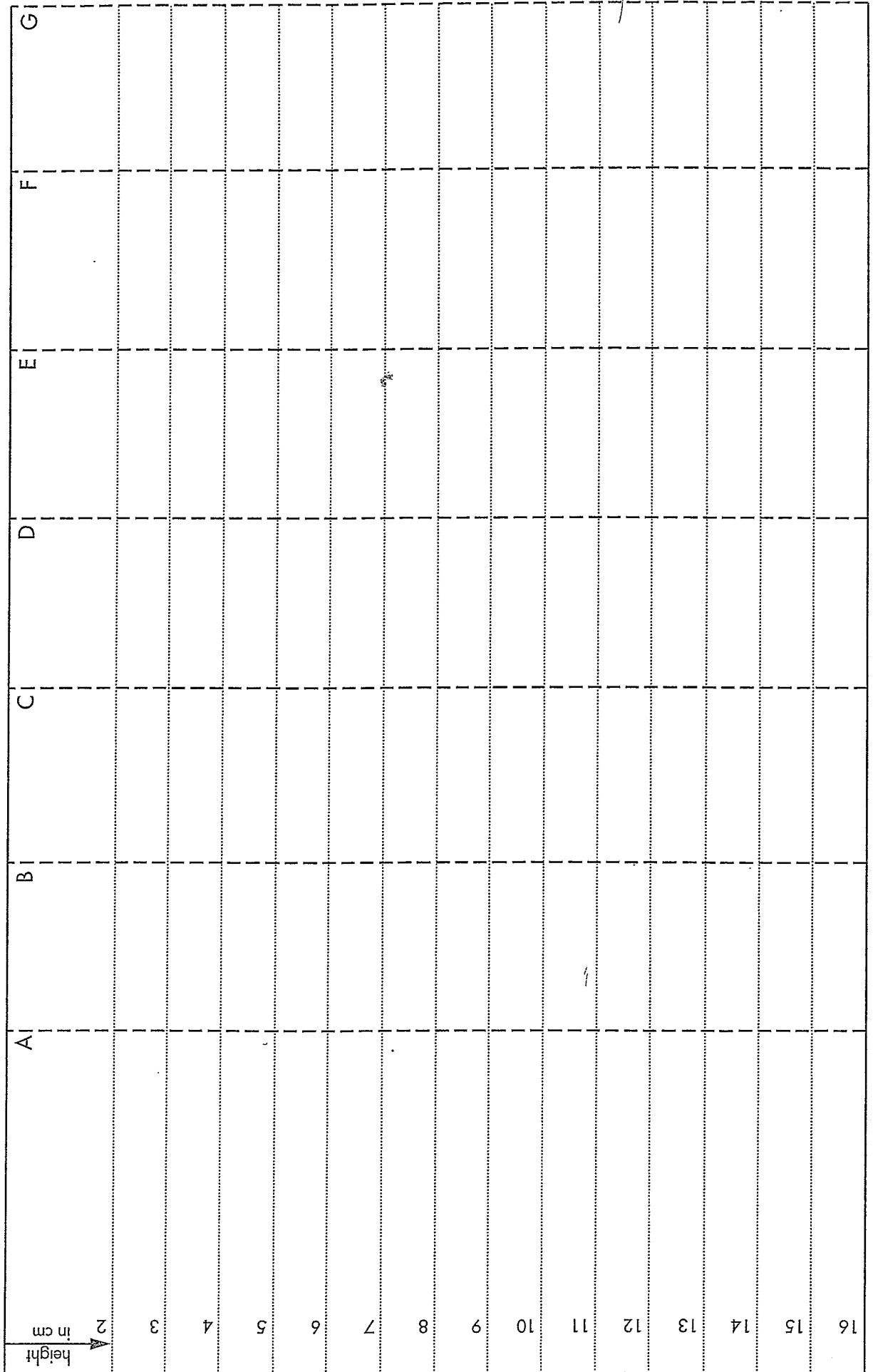
CYLINDER MAKER BASES

Cut out a base, then tape it to the corresponding cylinder side (see the next sheet).



CYLINDER MAKER SIDES

Cut along a dashed line to get the side for the base you have chosen. For example, cut along line C if you want to make a cylinder with base C. Then cut along a dotted line to get the height that you want.



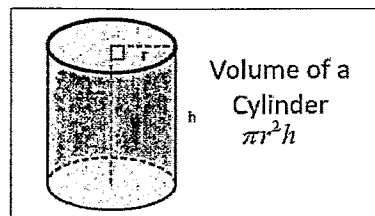
Friday, April 17

Google Hangout at 10:00.

Our final day of circles, spheres and cylinders. VOLUME

Look at the cylinder you made yesterday. It has a space inside! That too can be measured. How do you think you would find the volume of a cylinder?

It should seem reasonable to you that you would take the B (remember that capital B means the area of the base) x the height. In fact that is what you do.



Your work for today is to make some more cylinders with the nets I have given you. Make at least 2. Then measure them and calculate the volume for both.

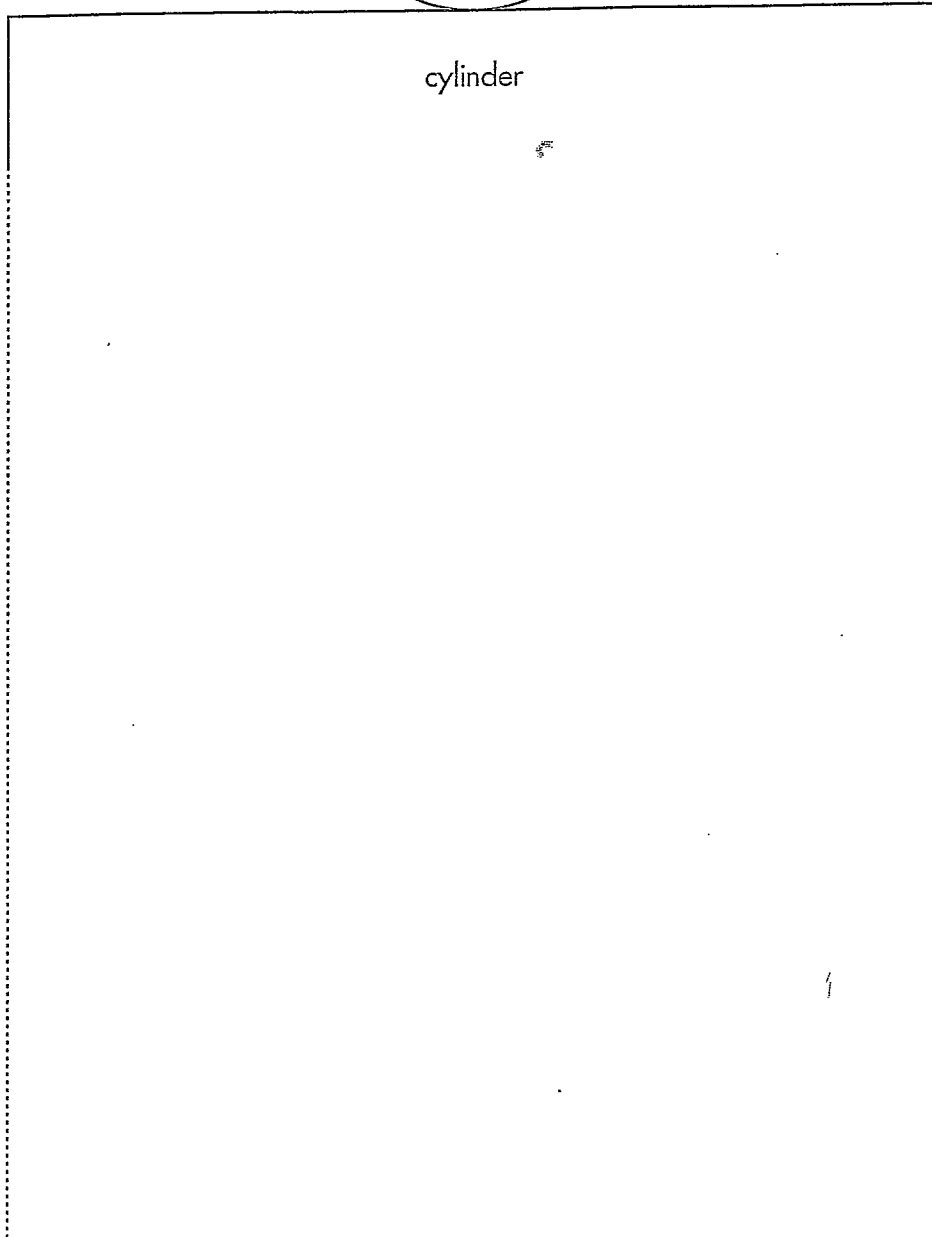
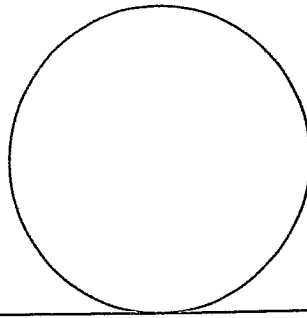
Now choose one and on your google doc record all these measurements: circumference, diameter, radius, surface area and volume. Post a pic of your cylinder as well.

Share your math doc with 3 friends. Read their comments when they comment and respond if a response seems appropriate. Then read and comment on any math docs classmates shared with you.

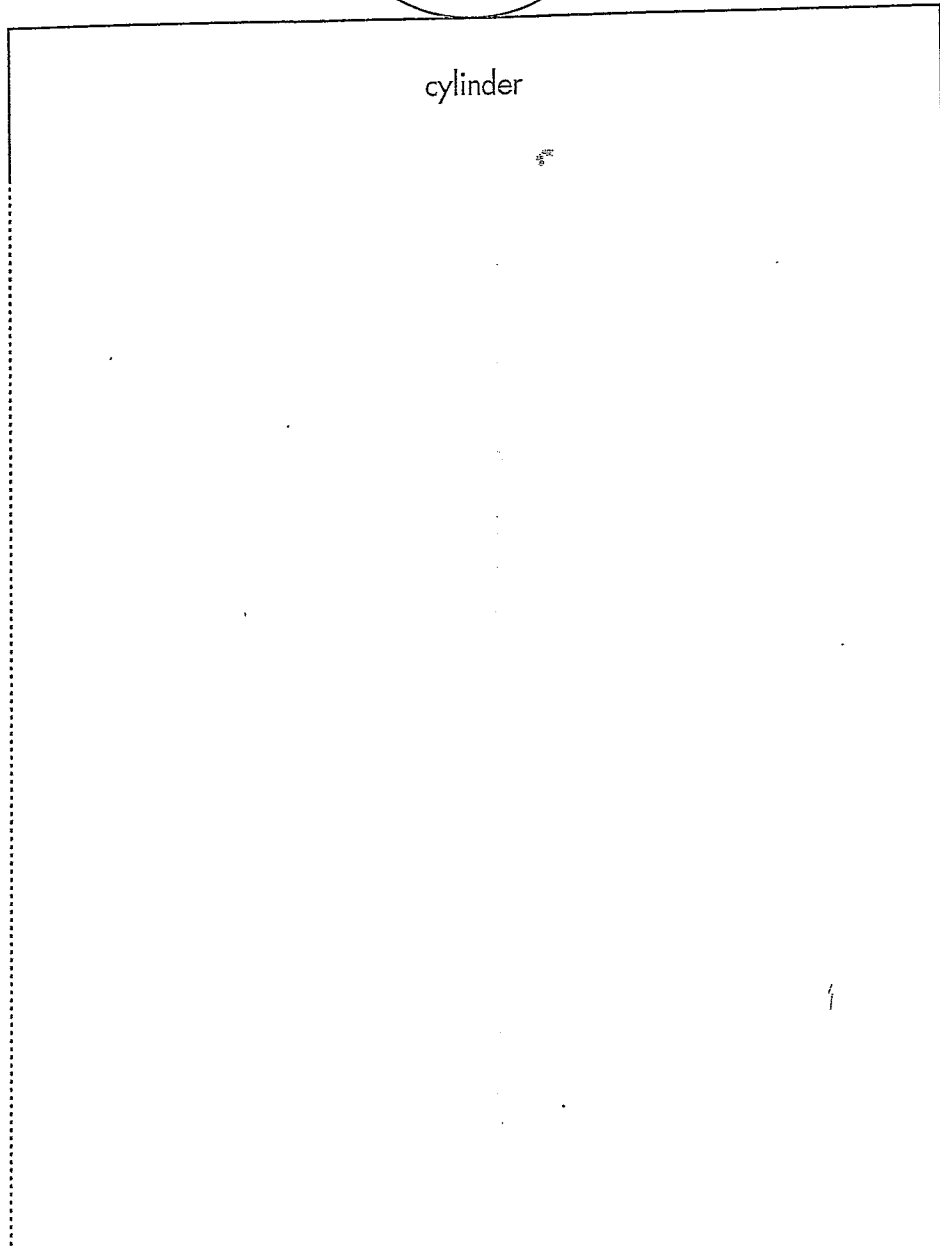
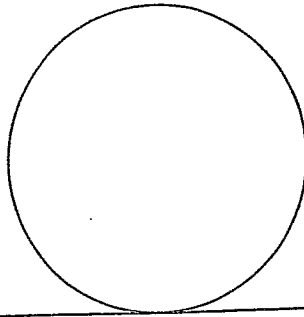
Whew! That was a fast look at circles, cylinders and spheres. For fun, I've included some cone nets. What can you do with a cone? Answer on your google doc.

Looking ahead: maker's space day, science Thursday and Friday, code writing in scratch and LH! Next week is going to be AMAZING!! Miss you.

CYLINDER PATTERN

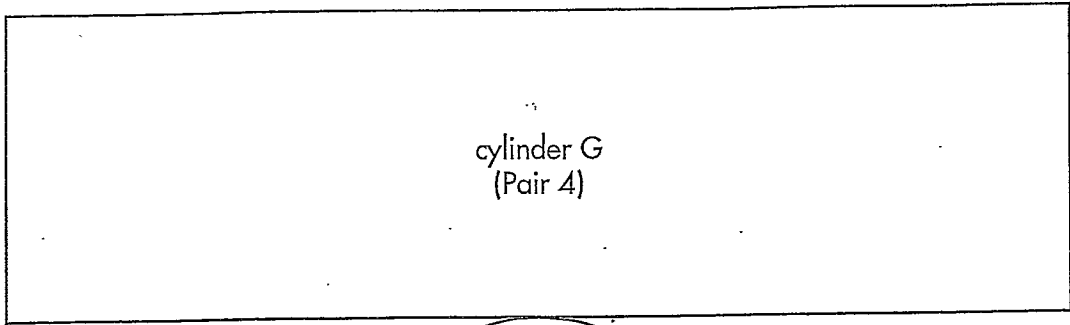


CYLINDER PATTERN

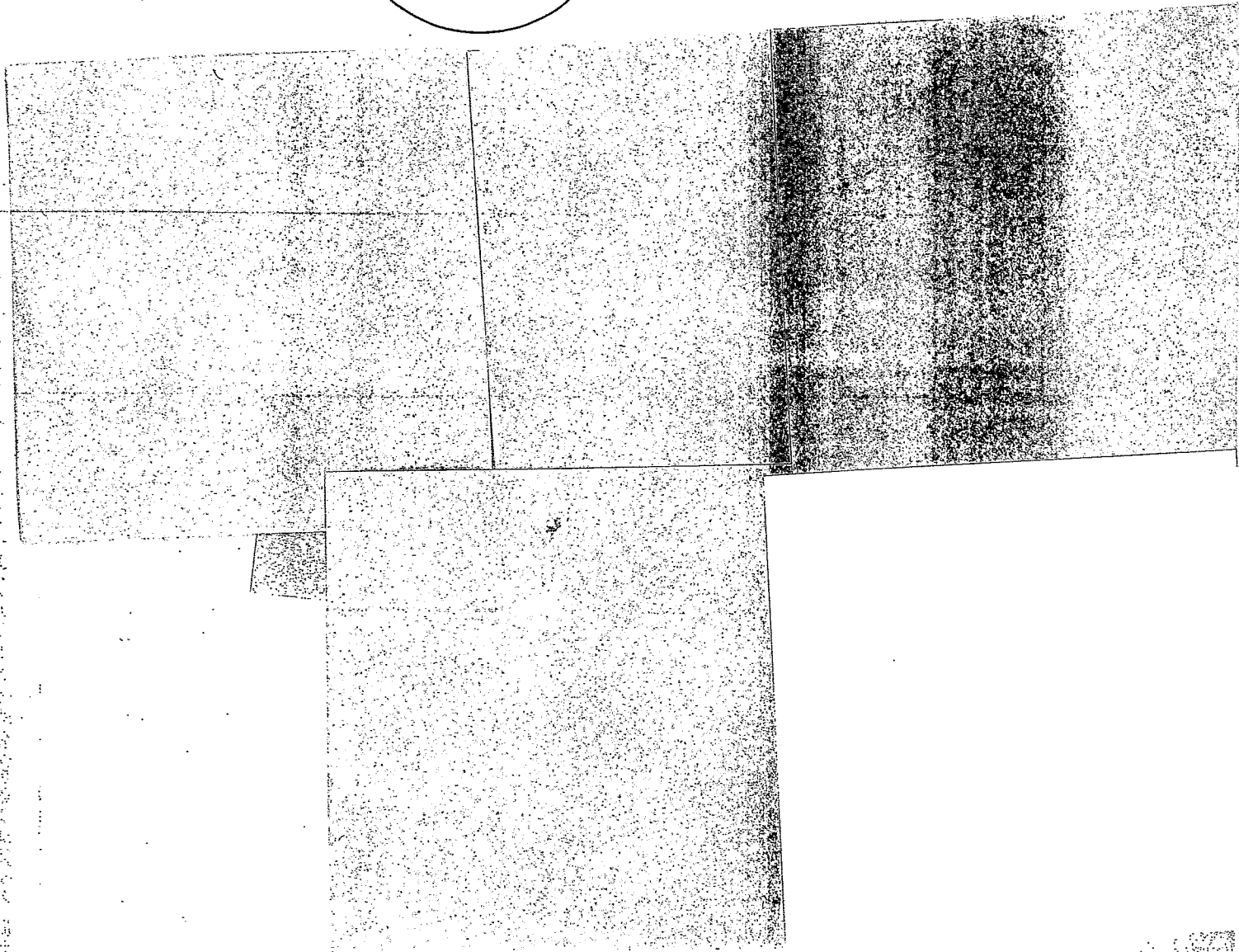
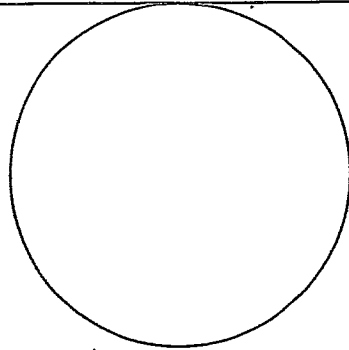


cylinder

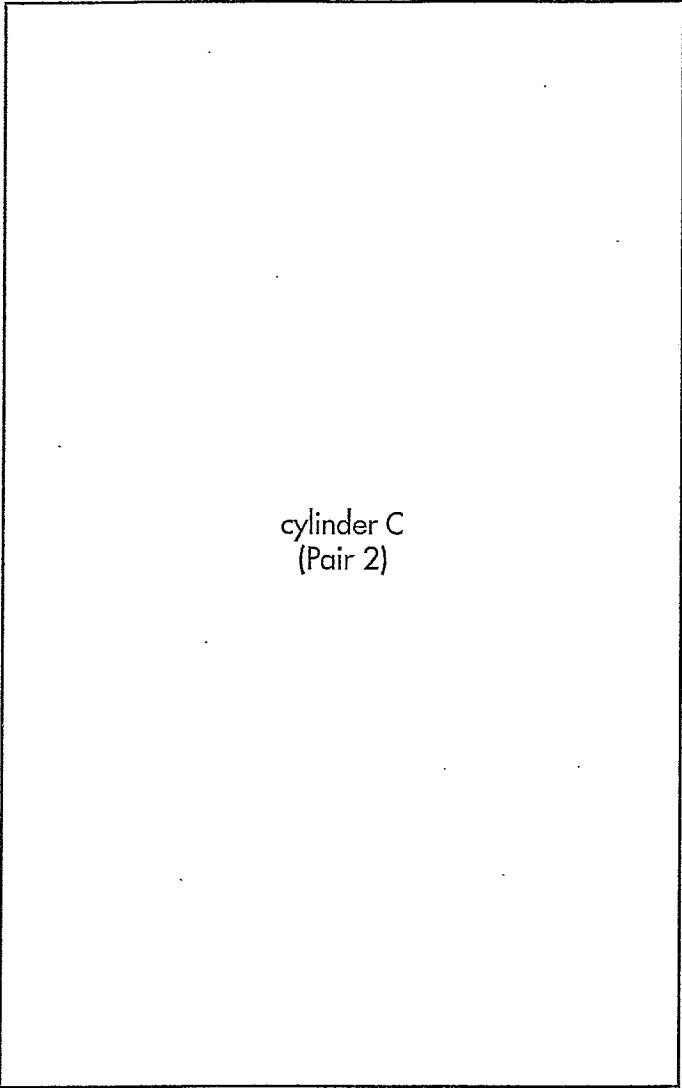
SOLID PATTERNS G, J, AND K



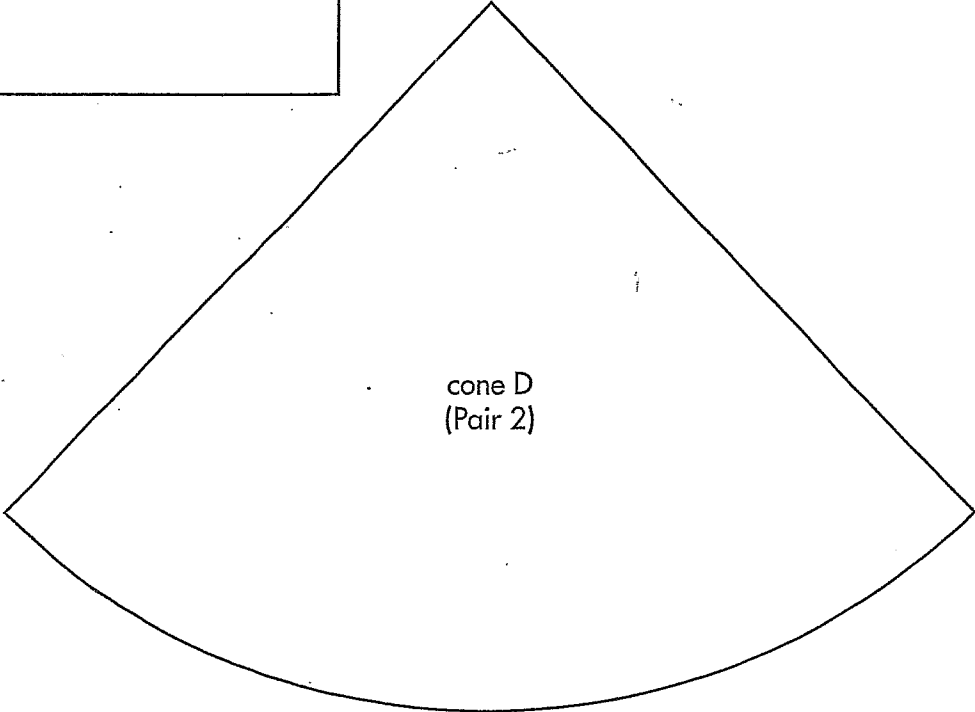
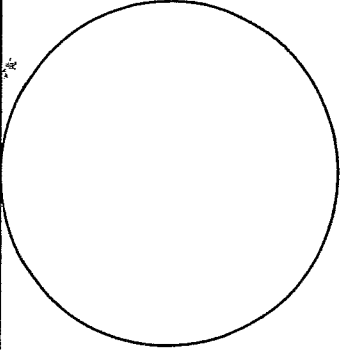
cylinder G
(Pair 4)



SOLID PATTERNS C AND D

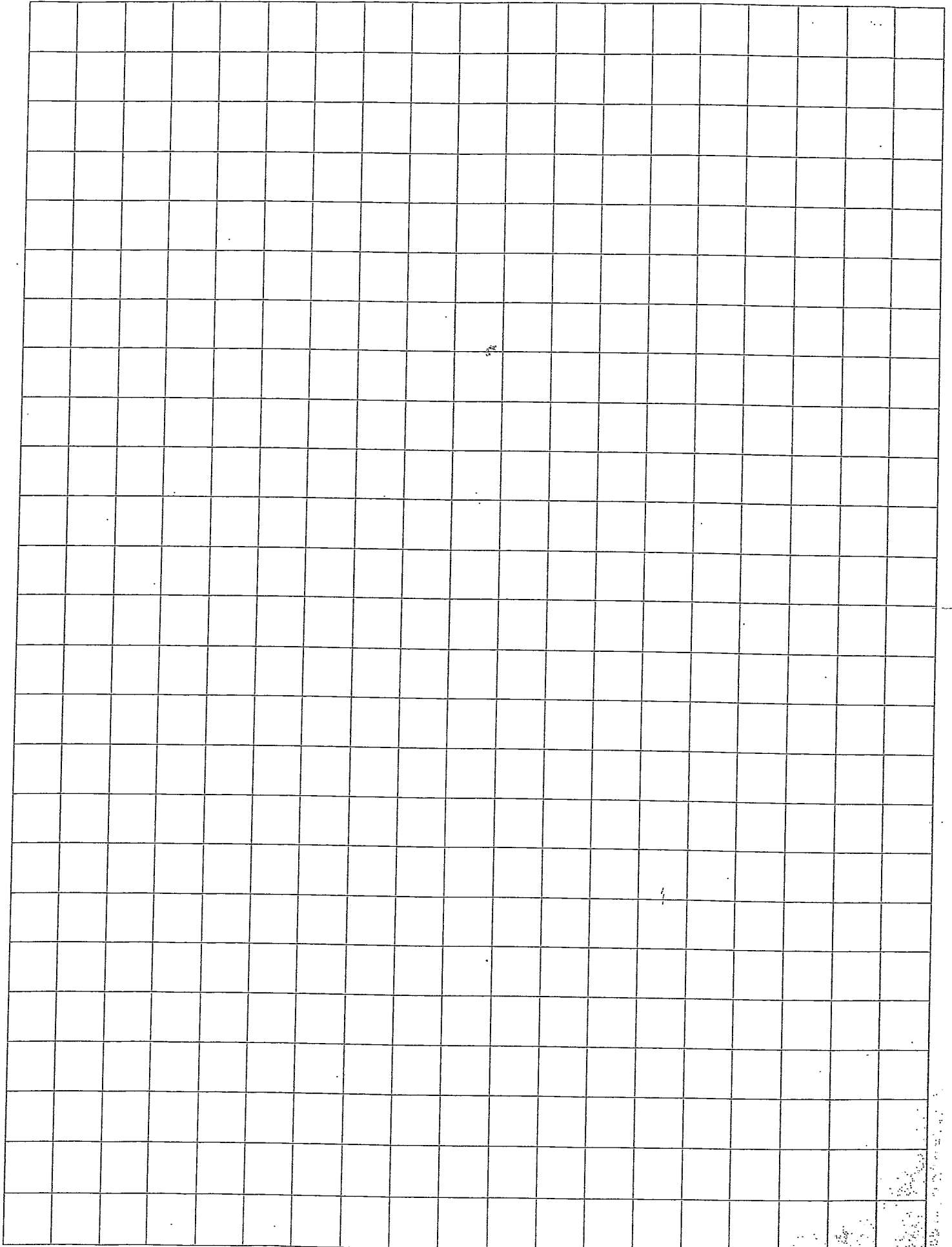


cylinder C
(Pair 2)

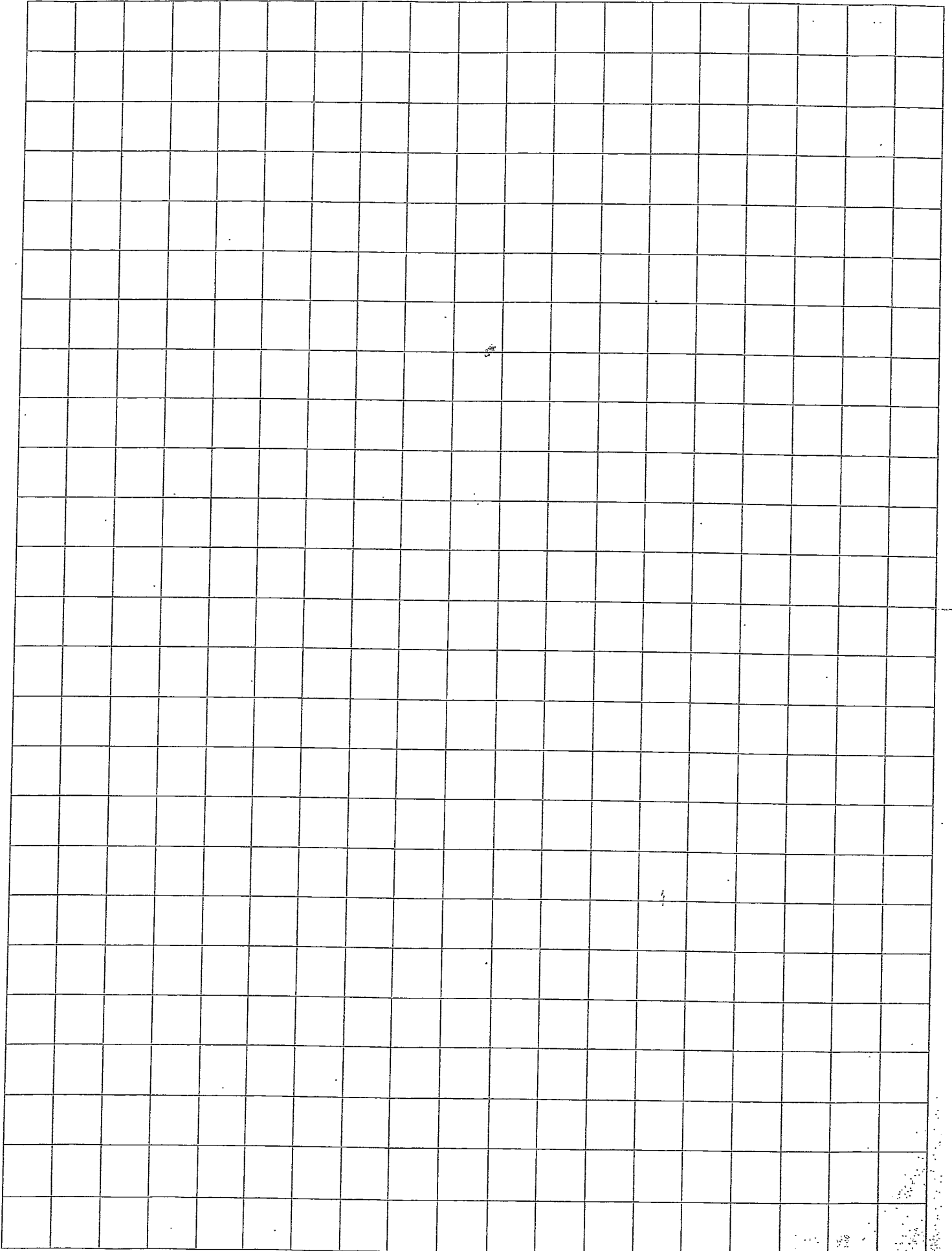


cone D
(Pair 2)

ONE-CENTIMETER GRAPH PAPER



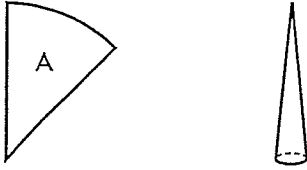
ONE-CENTIMETER GRAPH PAPER



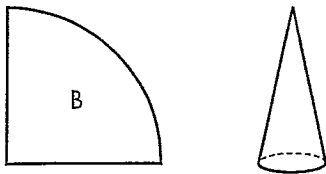
CONE MAKER

Cut along this line, then along line A, B, or C.

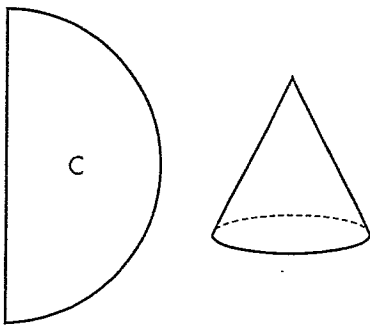
A makes a thinner cone.



B makes an average cone.



C makes a wider cone.



Cut along a curved line to get the height that you want. The number tells you the diameter of the base, in centimeters.

