Teachers: Tober

Course: Geometry

Assignment: Week 4 – Surface Area

Teacher: Tober   **Subject:** Geometry   **Dates:** Week 4: 5/11 – 5/15

Welcome to our Distance Learning Classroom!

Student Time Expectation per day: 30 minutes

Content Area & Materials	Learning Objectives	Tasks	Check-in Opportunities	Submission of Work for Grades
Geometry		• Paper Packet Option • Digital Option	Office Hours:	• Method: Scan, photo, email, or deliver
PAPER PACKET • Weekly Planner (this sheet) • 4 worksheets on surface area (first page is notes/examples)	**ESSENTIAL QUESTION:** How do you find the surface area of solid figures? STUDENTS WILL... • Be able to use the surface area formulas to find the total surface area of rectangular prisms, cubes, cylinders, and pyramids.	**PAPER PACKET:** If you picked up a paper packet you are expected to turn in the 3 pages of completed problems in order to get credit for week 4. (per distance learning calendar, week 4 work is due May 15). Work should be shown on a separate piece of paper. You are also welcome to scan or take photos of your work and email them to your teacher.	Mrs. Tober: Office Hours: Mon – Fri, 1pm – 3pm Email: Google #: (209) 597-8704	Students are expected to complete the paper packet or the digital option in order to receive full credit. IF SUBMITTING THE PAPER PACKET, LABEL WITH: • Student Name (First and Last) • Teacher Name • Geometry • Period #: ____
Digital Option • On the Tracy High School web page, you will find the same paper packet under the distance learning tab, then select Geometry, and then the name of your Geometry teacher.		**ONLINE WORK:** You are welcome to view the handouts online and do the work on a separate piece of paper. Once you complete the 3 pages of problems, you can scan or take photos of your work and then email them to your teacher. Please send all work at the same time.		TO SUBMIT ELECTRONICALLY, simply email your teacher a scan or photos of your completed work.

SURFACE AREA

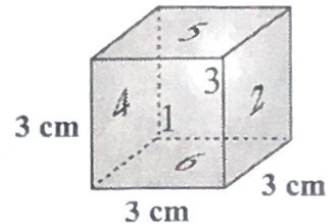The **surface area of a solid** is the total area of all the sides of a solid.

CUBE

There are six sides on a cube. To find the surface area of a cube, find the area of one side and multiply by 6.
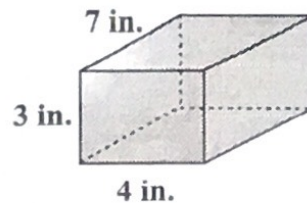
Area of each side of the cube:
$3 \times 3 = 9 \text{ cm}^2$
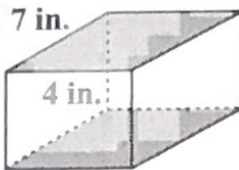
Total surface area: $9 \times 6 = 54 \text{ cm}^2$

RECTANGULAR PRISM

There are 6 sides on a rectangular prism. To find the surface area, add the areas of the six rectangular sides.
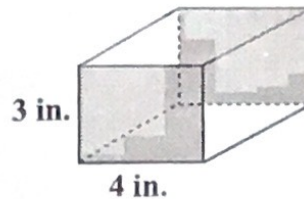
Top and Bottom

Area of top side:
7 in. × 4 in. = 28 in^2
Area of top and bottom:
28 in. × 2 in. = 56 in^2

Front and Back

Area of front:
3 in. × 4 in. = 12 in^2
Area of front and back:
12 in. × 2 in. = 24 in^2

Left and Right
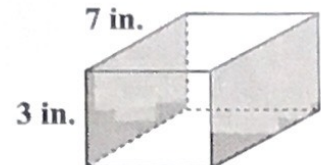
Area of left side:
3 in. × 7 in. = 21 in^2
Area of left and right:
21 in. × 2 in. = 42 in^2

Total surface area: 56 in^2 + 24 in^2 + 42 in^2 = 122 in^2

Find the surface area of the following cubes and prisms.

1.

2 ft.
2 ft.
2 ft.

SA = _____

2.

25 cm
6 cm
5 cm

SA = _____

3.

1 m
3 m
3 m

SA = _____

4.

7 mm
7 mm
7 mm

SA = _____

5.

4 ft.
9 ft.
4 ft.

SA = _____

6.

9 cm
5 cm   6 cm

SA = _____

7.

10 in.
2 in.
10 in.

SA = _____

8.

10 ft.   2 ft.
4 ft.

SA = _____

9.

5 m
5 m
5 m

SA = _____

10.

8 cm
14 cm
3 cm

SA = _____
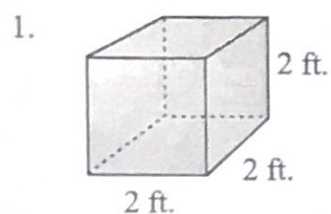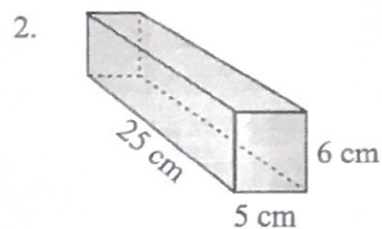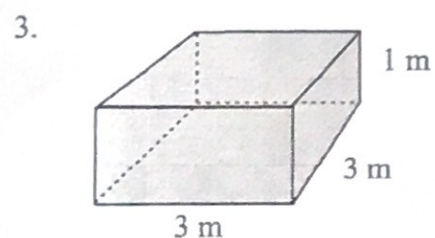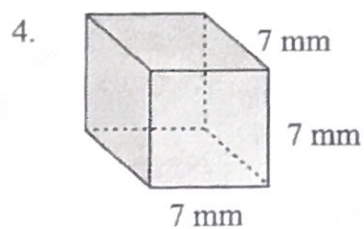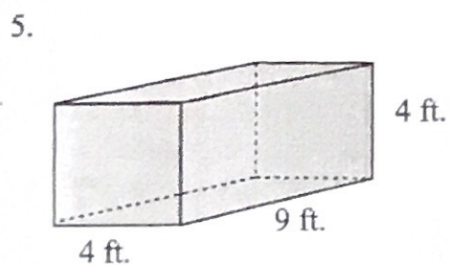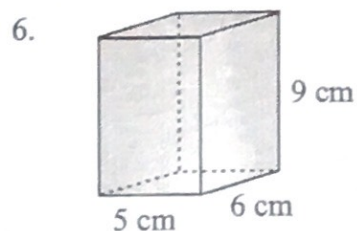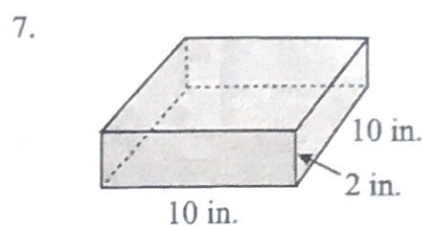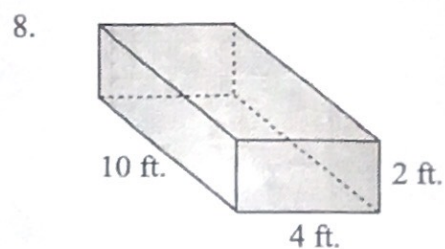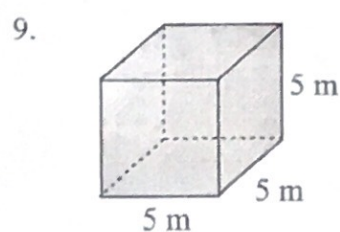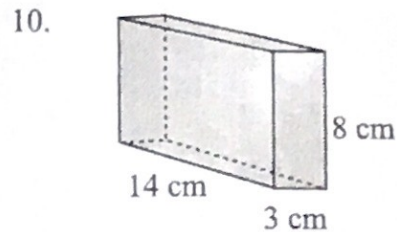
The pyramid below is made of a square base with 4 triangles on the sides.
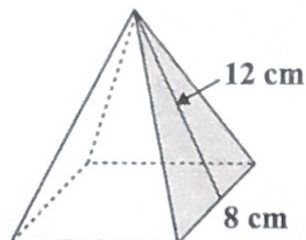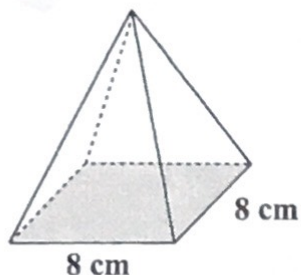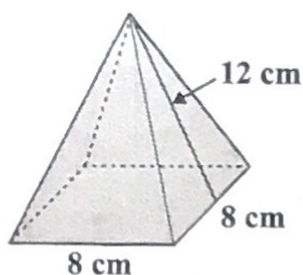
Area of square base:
$A = l \times w$
$A = 8 \times 8 = 64 \text{ cm}^2$

Area of sides:
Area of 1 side $= \frac{1}{2}bh$
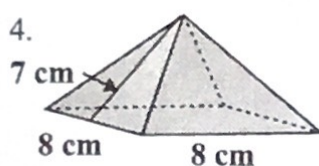$A = \frac{1}{2} \times 8 \times 12 = 48 \text{ cm}^2$
Area of 4 sides $= 48 \times 4 = 192 \text{ cm}^2$

Total surface area: $64 + 192 = 256 \text{ cm}^2$

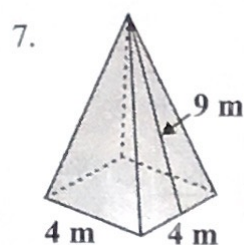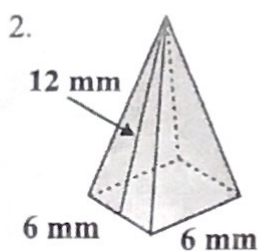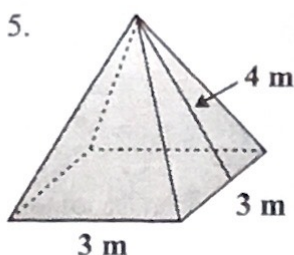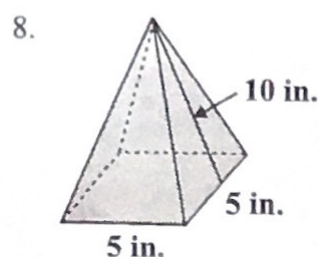**Find the surface area of the following pyramids.**

1.
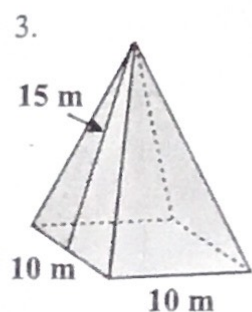

SA = _____

4.

SA = _____

7.

SA = _____

2.

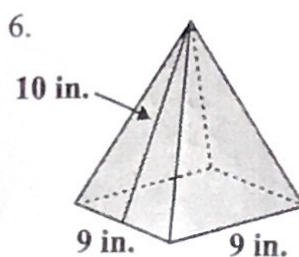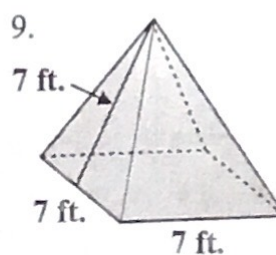SA = _____

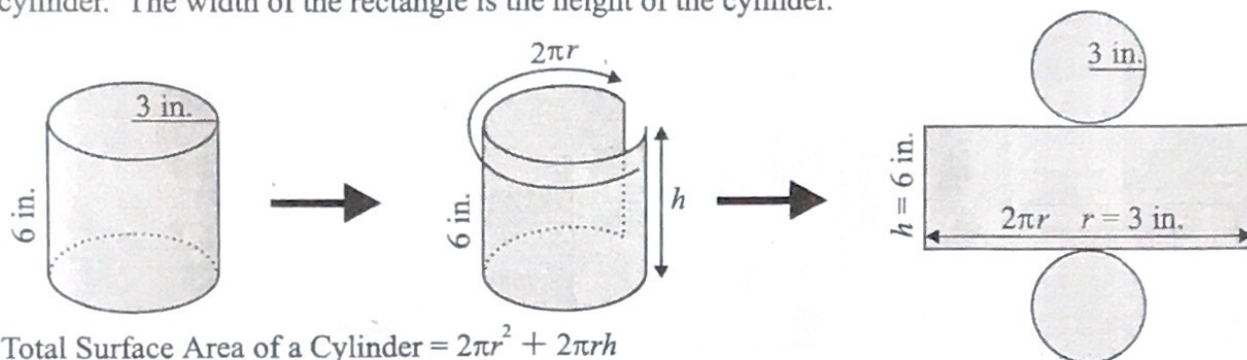5.

SA = _____

8.

SA = _____

3.

SA = _____

6.

SA = _____

9.

SA = _____
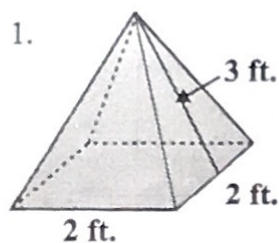
If the side of a cylinder were slit from top to bottom and laid flat, its shape would be a rectangle. The length of the rectangle is the same as the circumference of the circle that is the base of the cylinder. The width of the rectangle is the height of the cylinder.

Total Surface Area of a Cylinder $= 2\pi r^2 + 2\pi rh$

Area of top and bottom:
Area of a circle $= \pi r^2$
Area of top $= 3.14 \times 3^2 = 28.26$ in.^{2}
Area of top and bottom $= 2 \times 28.26 = 56.52$ in.^{2}

Area of side:
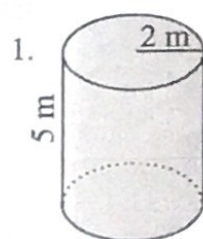Area of rectangle $= l \times h$
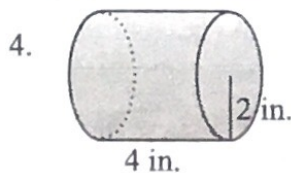$l = 2\pi r = 2 \times 3.14 \times 3 = 18.84$ in.
Area of rectangle $= 18.84 \times 6 = 113.04$ in.^{2}

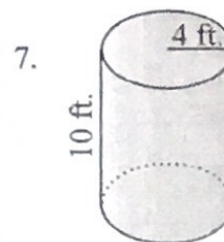Total surface area $= 56.52 + 113.04 = 169.56$ in^2

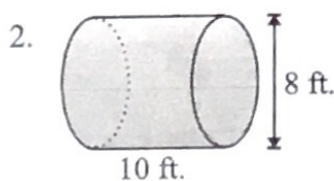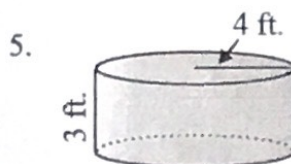**Find the surface area of the following cylinders. Use $\pi = 3.14$**
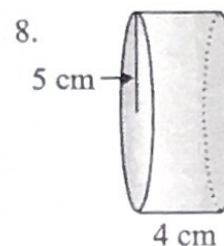
1. 2 m, 5 m

SA = _____

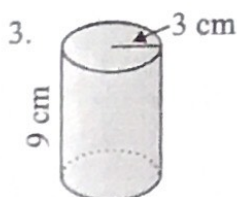2. 8 ft., 10 ft.

SA = _____

3. 3 cm, 9 cm

SA = _____

4. 4 in., 2 in.

SA = _____

5. 4 ft., 3 ft.

SA = _____

6. 10 m, 12 m

SA = _____

7. 4 ft., 10 ft.

SA = _____

8. 5 cm, 4 cm

SA = _____

9. 1 m, 4 m

SA = _____

315