

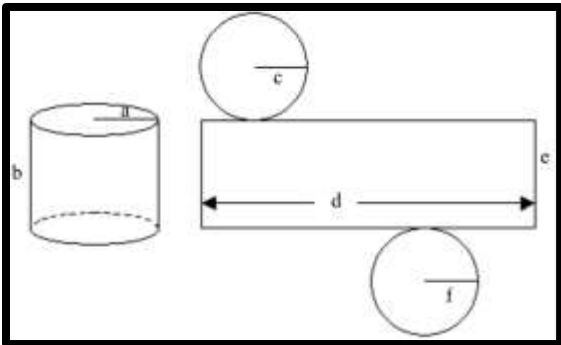
GMD-A1a

Practice Assessment Q3 #2

[NOTE: be ready to explain circumference, circle area, cylinder and/or cone surface area for real assessment]

1. Explain why the area of a circle with radius  $r$  can be found by  $A = \pi * r^2$ . You may use diagrams to accompany your explanation.

2. Label each part correctly in terms of  $r$  and  $h$ . Then give the full formula for cylinder surface area.



a:

b:

c:

d:

e:

f:

SA =

GMD-A1b

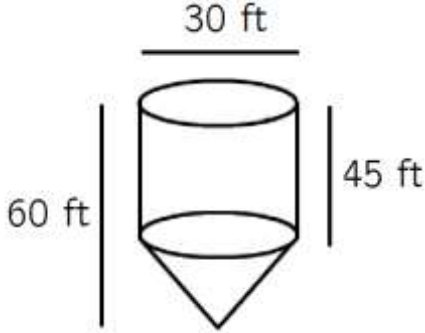
[NOTE: be ready to explain volume formulas for cylinders, cones, pyramids, and prisms on real assessment.]

3. Explain why the volume of a cylinder can be found with  $V = \pi * r^2 * h$ . You may use diagrams to accompany your explanation.

4. Explain why the volume of a cone with radius  $r$  and height  $h$  can be found by  $V = \frac{1}{3} * \pi * r^2 * h$ . You may use diagrams to accompany your explanation.

GMD-A2a

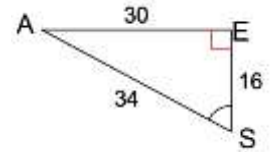
5. A silo is being used to store excess grain. It is shaped as shown, including a cone. The structure is 60 feet tall in total, 30 feet wide at its base, and the cylindrical portion is 45 feet tall. To the nearest whole number, find the volume of the silo. Include units in your answer.



6. Find the surface area of the exposed portions of the silo pictured above to the nearest whole number (the silo has a closed top). Include units in your answer.

SRT-C7a

7. If  $\sin(32) = z$  and  $\cos(\beta) = z$ , then what is the value of  $\beta$  ?



8. Write two trig ratios that both equal  $\frac{8}{17}$  based on the figure.

SRT-C8a:

9. A park ranger in a fire tower looks out of a 75-foot tall watchtower and spots a brush fire off in the distance. Using a clinometer, he measures the angle of depression of his line of sight down to the fire as  $8.3^\circ$ . How far to the nearest foot is the fire from the base of the watchtower?

10. A rectangular field needs to be re-seeded for new grass. One bag of grass seed will cover 30 square feet. If each bag of grass seed costs \$15, find the amount of money remaining, if any, if the budget is \$800.

