Model solutions to real world problems involving the volume of a cylinder by using the formula, Practice Set C

Name:

Date:

1. Use the Fact Table below to answer the following questions.

Penny	Nickel	Dime
radius = 9.525 mm height = 1.52 mm	radius = 10.605 mm height = 1.95 mm	radius = 8.955 mm height = 1.35 mm
		

a. What is the volume of $.80 worth of pennies?

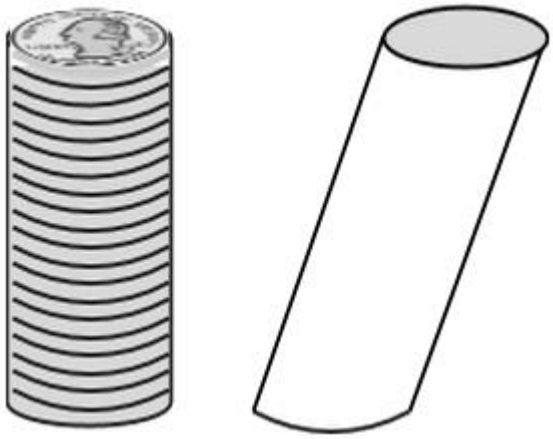
b. What is the volume of $.80 worth of nickels?

c. What is the volume of $.80 worth of dimes?

d. How many pennies would it take to have the same volume as 10 nickels? (*Round to the nearest whole penny*)

e. How many dimes would it take to have the same volume as 10 nickels? (*Round to the nearest whole dime*)

2. Use your knowledge of the Volume of a Cylinder to answer questions about the Volume of the Oblique Cylinder on the right.



a. Label where you think the radius and height of the Oblique Cylinder are.

b. Do you think the volume of the oblique cylinder is found in the same way or a different way as the regular cylinder?

c. Remember the radius of a quarter is 12.13 mm and the height of one quarter is 1.75 mm. Determine the volume of the 20 quarters shown, as a regular cylinder, on the left, in the picture above.

d. How will the volume of the oblique cylinder next to it compare to the volume of the stack of 20 quarters?

Model solutions to real world problems involving the volume of a cylinder by using the formula, Practice Set C Answer Key

1. Use the Fact Table below to answer the following questions.

Penny	Nickel	Dime
radius = 9.525 mm height = 1.52 mm	radius = 10.605 mm height = 1.95 mm	radius = 8.955 mm height = 1.35 mm
		

a. What is the volume of $.80 worth of pennies?

34,641.22 mm^3

b. What is the volume of $.80 worth of nickels?

11,018.07 mm^3

c. What is the volume of $.80 worth of dimes?

2,719.47 mm^3

d. How many pennies would it take to have the same volume as 10 nickels? (*Round to the nearest whole penny*)

16 pennies

V(10 nickels)=6,886.29 mm^3 and the V(1 penny)=433.02 mm^3 , so by dividing the 2 values we get 15.9 pennies which rounds to 16 total.

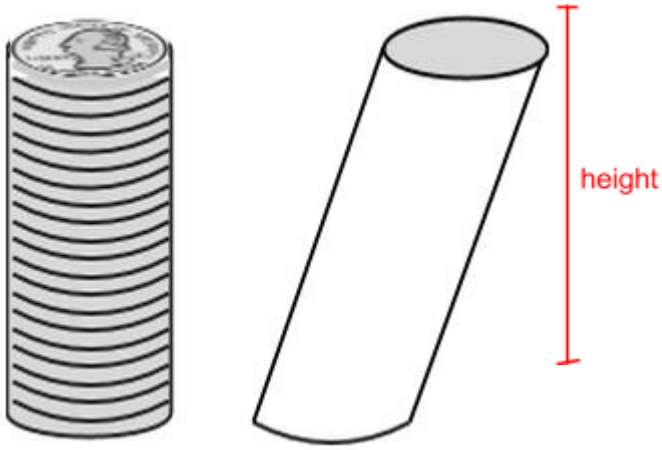
e. How many dimes would it take to have the same volume as 10 nickels? (*Round to the nearest whole dime*)

16 pennies

V(10 nickels)=6,886.29 mm^3 and the V(1 dime)=339.93 mm^3 , so by dividing the 2 values we get 20.26 dimes which rounds to 20 total.

2. Use your knowledge of the Volume of a Cylinder to answer questions about the

Volume of the Oblique Cylinder on the right.



a. Label where you think the radius and height of the Oblique Cylinder are.

Shown in diagram above.

b. Do you think the volume of the oblique cylinder is found in the same way or a different way as the regular cylinder?

It will be found the same way. Students should note that height is still perpendicular to the bases.

c. Remember the radius of a quarter is 12.13 mm and the height of one quarter is 1.75 mm. Determine the volume of the 20 quarters shown, as a regular cylinder, on the left, in the picture above.

V= 16,170.35 mm^3

d. How will the volume of the oblique cylinder next to it compare to the volume of the stack of 20 quarters?

It will be the same.