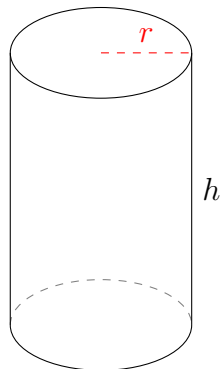


Area and Volume of Cylinders (A)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

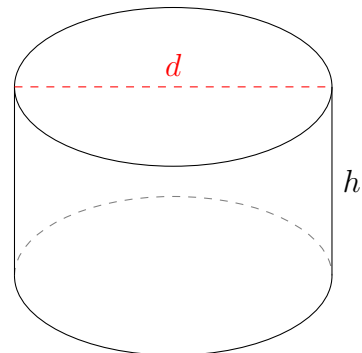


$$r = 1.2 \text{ km} \quad h = 3.6 \text{ km}$$

Surface Area =

Volume =

2.

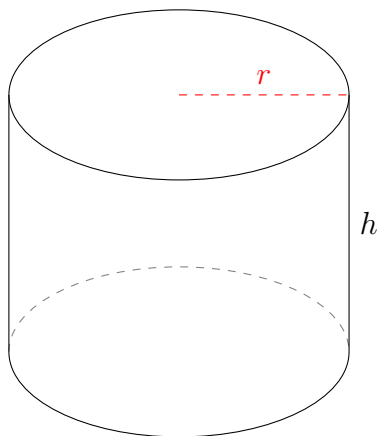


$$d = 12.6 \text{ cm} \quad h = 7.5 \text{ cm}$$

Surface Area =

Volume =

3.

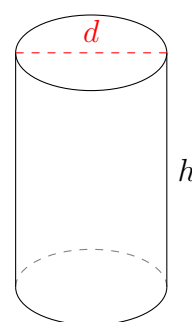


$$r = 18 \text{ ft} \quad h = 27.2 \text{ ft}$$

Surface Area =

Volume =

4.



$$d = 12 \text{ m} \quad h = 18.6 \text{ m}$$

Surface Area =

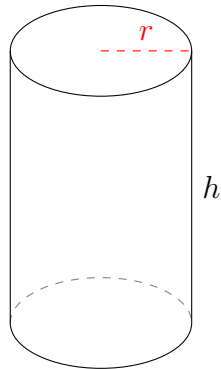
Volume =

Area and Volume of Cylinders (A) Answers

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

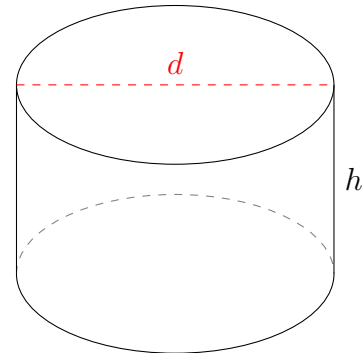


$$r = 1.2 \text{ km} \quad h = 3.6 \text{ km}$$

$$\text{Surface Area} = 36.19 \text{ km}^2$$

$$\text{Volume} = 16.29 \text{ km}^3$$

2.

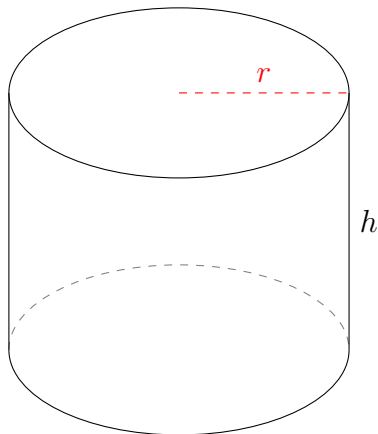


$$d = 12.6 \text{ cm} \quad h = 7.5 \text{ cm}$$

$$\text{Surface Area} = 546.26 \text{ cm}^2$$

$$\text{Volume} = 935.17 \text{ cm}^3$$

3.

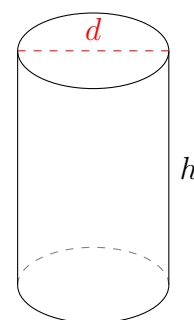


$$r = 18 \text{ ft} \quad h = 27.2 \text{ ft}$$

$$\text{Surface Area} = 5112 \text{ ft}^2$$

$$\text{Volume} = 27,686.23 \text{ ft}^3$$

4.



$$d = 12 \text{ m} \quad h = 18.6 \text{ m}$$

$$\text{Surface Area} = 927.4 \text{ m}^2$$

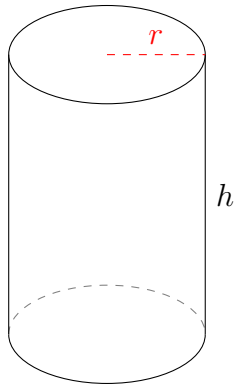
$$\text{Volume} = 2103.61 \text{ m}^3$$

Area and Volume of Cylinders (B)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

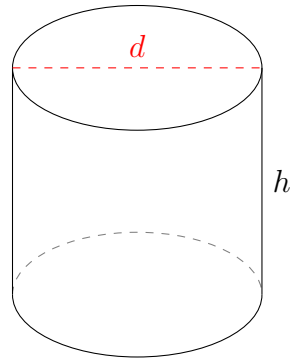


$$r = 9.1 \text{ mm} \quad h = 25.9 \text{ mm}$$

Surface Area =

Volume =

2.

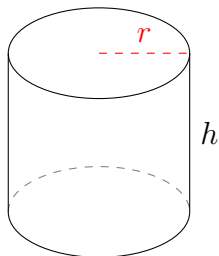


$$d = 16.5 \text{ cm} \quad h = 15 \text{ cm}$$

Surface Area =

Volume =

3.

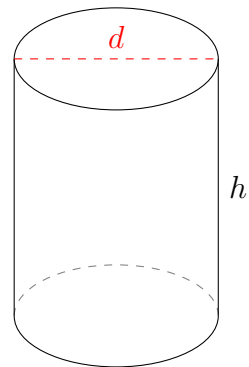


$$r = 7.2 \text{ mm} \quad h = 12.6 \text{ mm}$$

Surface Area =

Volume =

4.



$$d = 24.3 \text{ nm} \quad h = 30.6 \text{ nm}$$

Surface Area =

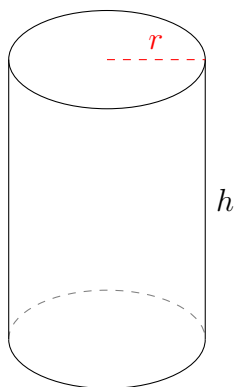
Volume =

Area and Volume of Cylinders (B) Answers

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

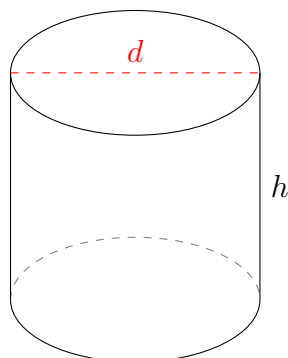


$$r = 9.1 \text{ mm} \quad h = 25.9 \text{ mm}$$

$$\text{Surface Area} = 2001.19 \text{ mm}^2$$

$$\text{Volume} = 6738.02 \text{ mm}^3$$

2.

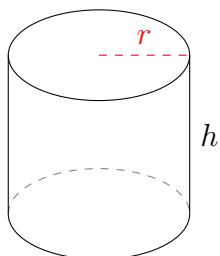


$$d = 16.5 \text{ cm} \quad h = 15 \text{ cm}$$

$$\text{Surface Area} = 1205.19 \text{ cm}^2$$

$$\text{Volume} = 3207.37 \text{ cm}^3$$

3.

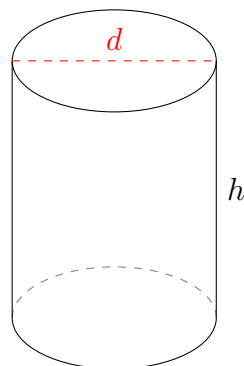


$$r = 7.2 \text{ mm} \quad h = 12.6 \text{ mm}$$

$$\text{Surface Area} = 895.73 \text{ mm}^2$$

$$\text{Volume} = 2052.04 \text{ mm}^3$$

4.



$$d = 24.3 \text{ nm} \quad h = 30.6 \text{ nm}$$

$$\text{Surface Area} = 3263.56 \text{ nm}^2$$

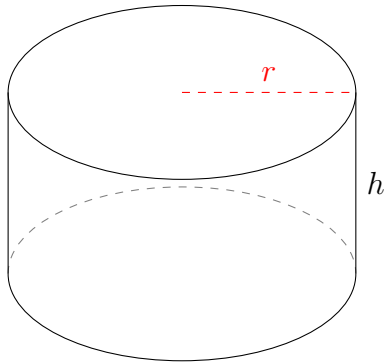
$$\text{Volume} = 14,191.35 \text{ nm}^3$$

Area and Volume of Cylinders (C)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

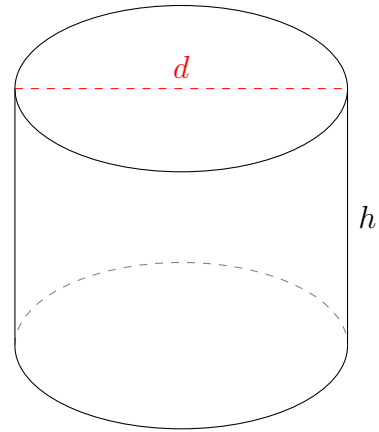


$$r = 2.3 \text{ nm} \quad h = 2.4 \text{ nm}$$

Surface Area =

Volume =

2.

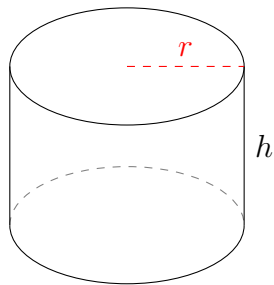


$$d = 26.4 \text{ yd} \quad h = 20.4 \text{ yd}$$

Surface Area =

Volume =

3.

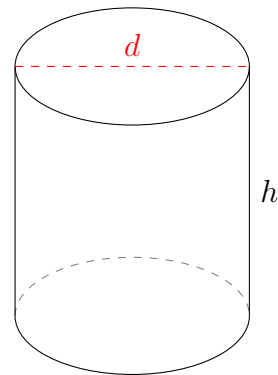


$$r = 7.75 \text{ m} \quad h = 10.5 \text{ m}$$

Surface Area =

Volume =

4.



$$d = 27.9 \text{ yd} \quad h = 29.7 \text{ yd}$$

Surface Area =

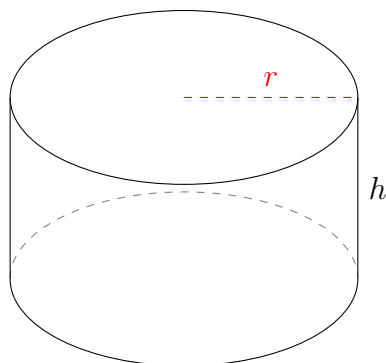
Volume =

Area and Volume of Cylinders (C) Answers

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

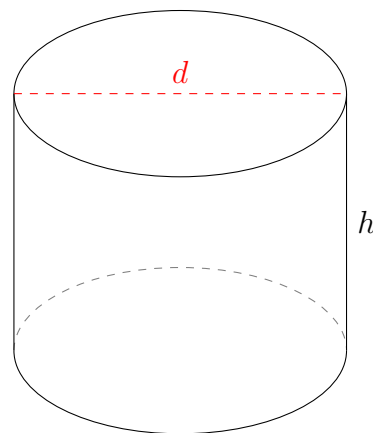


$$r = 2.3 \text{ nm} \quad h = 2.4 \text{ nm}$$

$$\text{Surface Area} = 67.92 \text{ nm}^2$$

$$\text{Volume} = 39.89 \text{ nm}^3$$

2.

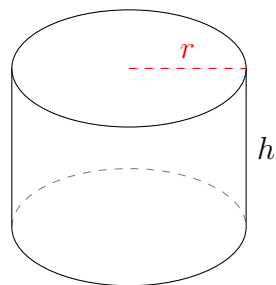


$$d = 26.4 \text{ yd} \quad h = 20.4 \text{ yd}$$

$$\text{Surface Area} = 2786.72 \text{ yd}^2$$

$$\text{Volume} = 11,166.78 \text{ yd}^3$$

3.

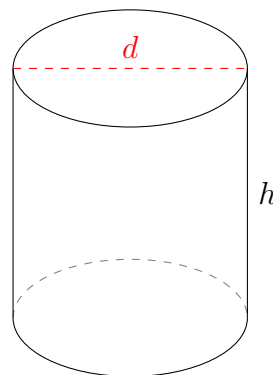


$$r = 7.75 \text{ m} \quad h = 10.5 \text{ m}$$

$$\text{Surface Area} = 888.68 \text{ m}^2$$

$$\text{Volume} = 1981.27 \text{ m}^3$$

4.



$$d = 27.9 \text{ yd} \quad h = 29.7 \text{ yd}$$

$$\text{Surface Area} = 3825.94 \text{ yd}^2$$

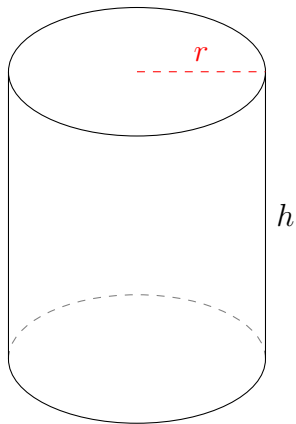
$$\text{Volume} = 18,157.44 \text{ yd}^3$$

Area and Volume of Cylinders (D)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

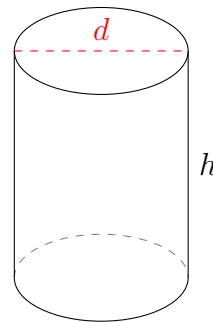


$$r = 8.5 \text{ nm} \quad h = 19 \text{ nm}$$

Surface Area =

Volume =

2.

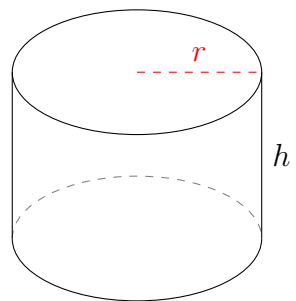


$$d = 4.6 \text{ in} \quad h = 6 \text{ in}$$

Surface Area =

Volume =

3.

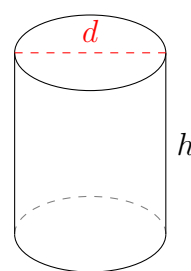


$$r = 6.6 \text{ yd} \quad h = 8.8 \text{ yd}$$

Surface Area =

Volume =

4.



$$d = 10 \text{ cm} \quad h = 12 \text{ cm}$$

Surface Area =

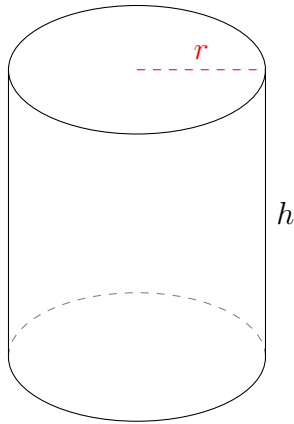
Volume =

Area and Volume of Cylinders (D) Answers

Calculate the surface area and volume for each cylinder.

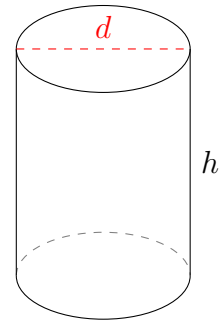
$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.



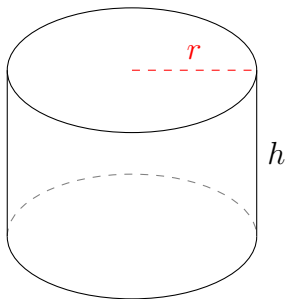
$$\begin{aligned} r &= 8.5 \text{ nm} & h &= 19 \text{ nm} \\ \text{Surface Area} &= 1468.69 \text{ nm}^2 \\ \text{Volume} &= 4312.62 \text{ nm}^3 \end{aligned}$$

2.



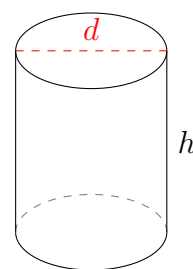
$$\begin{aligned} d &= 4.6 \text{ in} & h &= 6 \text{ in} \\ \text{Surface Area} &= 119.95 \text{ in}^2 \\ \text{Volume} &= 99.71 \text{ in}^3 \end{aligned}$$

3.



$$\begin{aligned} r &= 6.6 \text{ yd} & h &= 8.8 \text{ yd} \\ \text{Surface Area} &= 638.62 \text{ yd}^2 \\ \text{Volume} &= 1204.26 \text{ yd}^3 \end{aligned}$$

4.



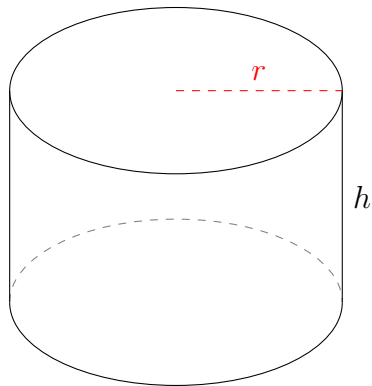
$$\begin{aligned} d &= 10 \text{ cm} & h &= 12 \text{ cm} \\ \text{Surface Area} &= 534.07 \text{ cm}^2 \\ \text{Volume} &= 942.48 \text{ cm}^3 \end{aligned}$$

Area and Volume of Cylinders (E)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

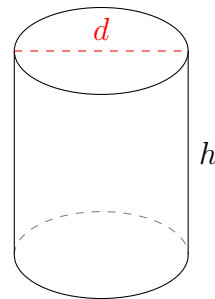


$$r = 17.6 \text{ cm} \quad h = 22.4 \text{ cm}$$

Surface Area =

Volume =

2.

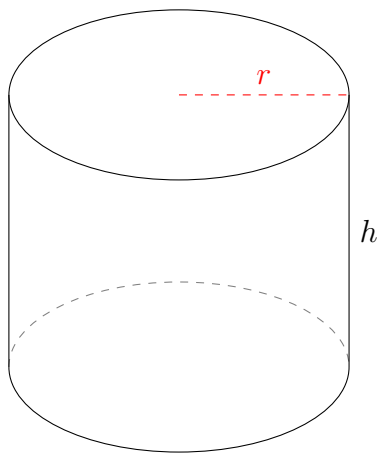


$$d = 9.2 \text{ ft} \quad h = 10.8 \text{ ft}$$

Surface Area =

Volume =

3.

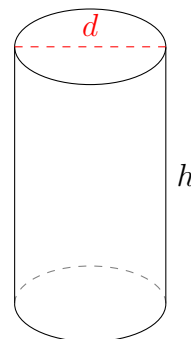


$$r = 9 \text{ yd} \quad h = 14.4 \text{ yd}$$

Surface Area =

Volume =

4.



$$d = 4 \text{ ft} \quad h = 6.8 \text{ ft}$$

Surface Area =

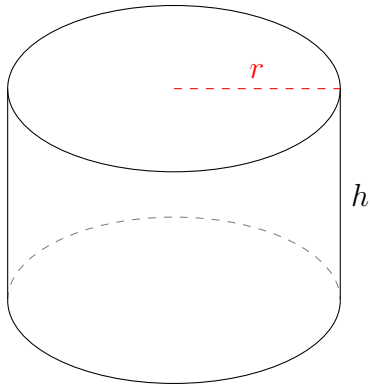
Volume =

Area and Volume of Cylinders (E) Answers

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

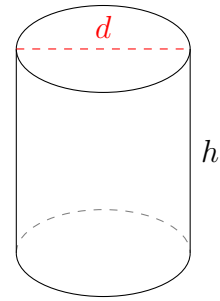


$$r = 17.6 \text{ cm} \quad h = 22.4 \text{ cm}$$

$$\text{Surface Area} = 4423.36 \text{ cm}^2$$

$$\text{Volume} = 21,798.33 \text{ cm}^3$$

2.

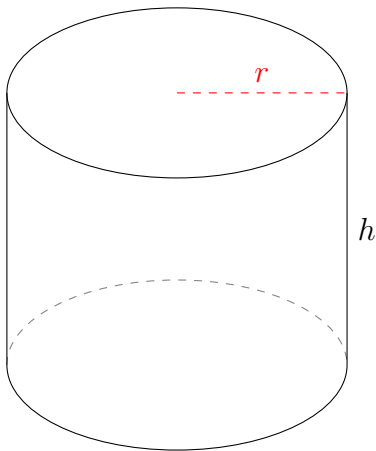


$$d = 9.2 \text{ ft} \quad h = 10.8 \text{ ft}$$

$$\text{Surface Area} = 445.1 \text{ ft}^2$$

$$\text{Volume} = 717.94 \text{ ft}^3$$

3.

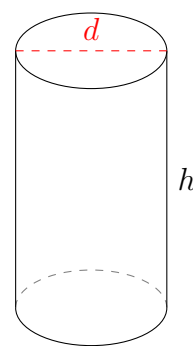


$$r = 9 \text{ yd} \quad h = 14.4 \text{ yd}$$

$$\text{Surface Area} = 1323.24 \text{ yd}^2$$

$$\text{Volume} = 3664.35 \text{ yd}^3$$

4.



$$d = 4 \text{ ft} \quad h = 6.8 \text{ ft}$$

$$\text{Surface Area} = 110.58 \text{ ft}^2$$

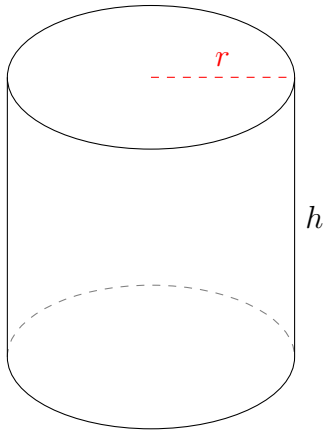
$$\text{Volume} = 85.45 \text{ ft}^3$$

Area and Volume of Cylinders (F)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

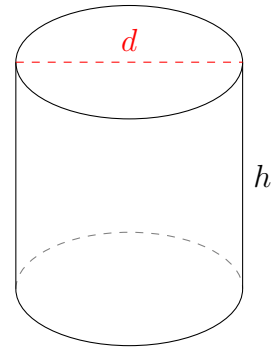


$$r = 15.2 \text{ km} \quad h = 29.6 \text{ km}$$

Surface Area =

Volume =

2.

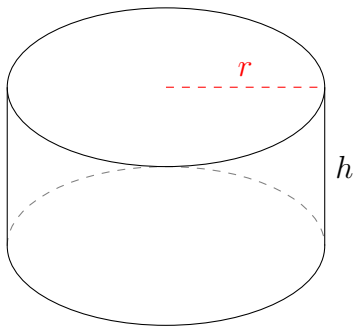


$$d = 24 \text{ km} \quad h = 24 \text{ km}$$

Surface Area =

Volume =

3.

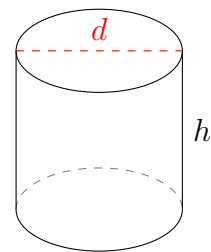


$$r = 2.1 \text{ ft} \quad h = 2.1 \text{ ft}$$

Surface Area =

Volume =

4.



$$d = 13.2 \text{ km} \quad h = 12.6 \text{ km}$$

Surface Area =

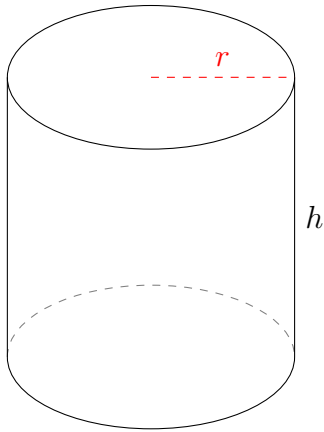
Volume =

Area and Volume of Cylinders (F) Answers

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

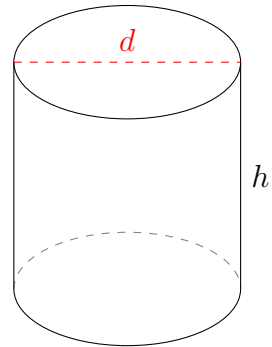


$$r = 15.2 \text{ km} \quad h = 29.6 \text{ km}$$

$$\text{Surface Area} = 4278.6 \text{ km}^2$$

$$\text{Volume} = 21,484.67 \text{ km}^3$$

2.

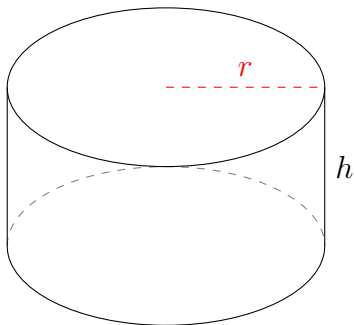


$$d = 24 \text{ km} \quad h = 24 \text{ km}$$

$$\text{Surface Area} = 2714.34 \text{ km}^2$$

$$\text{Volume} = 10,857.34 \text{ km}^3$$

3.

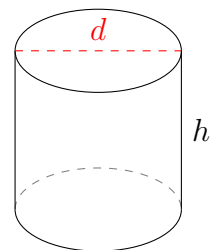


$$r = 2.1 \text{ ft} \quad h = 2.1 \text{ ft}$$

$$\text{Surface Area} = 55.42 \text{ ft}^2$$

$$\text{Volume} = 29.09 \text{ ft}^3$$

4.



$$d = 13.2 \text{ km} \quad h = 12.6 \text{ km}$$

$$\text{Surface Area} = 796.21 \text{ km}^2$$

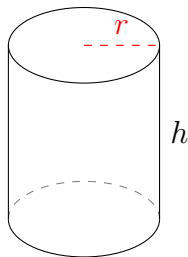
$$\text{Volume} = 1724.28 \text{ km}^3$$

Area and Volume of Cylinders (G)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

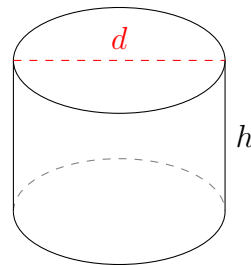


$$r = 1 \text{ cm} \quad h = 2.3 \text{ cm}$$

Surface Area =

Volume =

2.

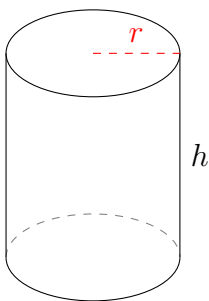


$$d = 16.8 \text{ in} \quad h = 12 \text{ in}$$

Surface Area =

Volume =

3.

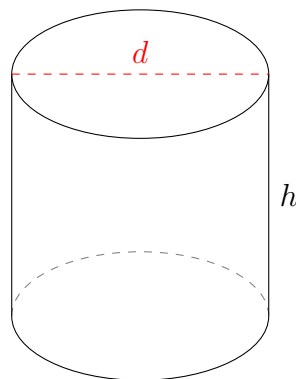


$$r = 8.05 \text{ cm} \quad h = 18.9 \text{ cm}$$

Surface Area =

Volume =

4.



$$d = 3.4 \text{ in} \quad h = 3.2 \text{ in}$$

Surface Area =

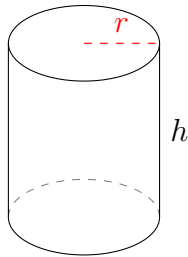
Volume =

Area and Volume of Cylinders (G) Answers

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

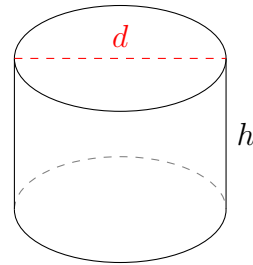


$$r = 1 \text{ cm} \quad h = 2.3 \text{ cm}$$

$$\text{Surface Area} = 20.73 \text{ cm}^2$$

$$\text{Volume} = 7.23 \text{ cm}^3$$

2.

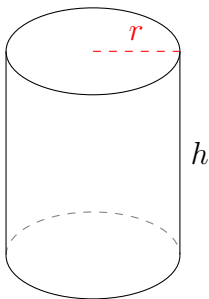


$$d = 16.8 \text{ in} \quad h = 12 \text{ in}$$

$$\text{Surface Area} = 1076.69 \text{ in}^2$$

$$\text{Volume} = 2660.05 \text{ in}^3$$

3.

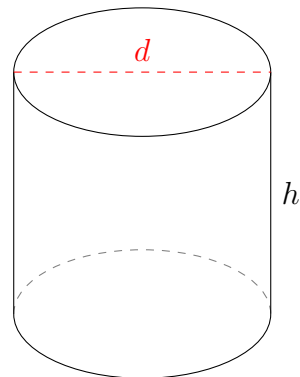


$$r = 8.05 \text{ cm} \quad h = 18.9 \text{ cm}$$

$$\text{Surface Area} = 1363.12 \text{ cm}^2$$

$$\text{Volume} = 3847.72 \text{ cm}^3$$

4.



$$d = 3.4 \text{ in} \quad h = 3.2 \text{ in}$$

$$\text{Surface Area} = 52.34 \text{ in}^2$$

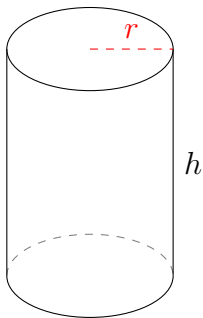
$$\text{Volume} = 29.05 \text{ in}^3$$

Area and Volume of Cylinders (H)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

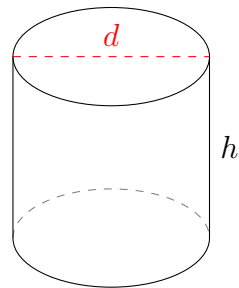


$$r = 8.8 \text{ nm} \quad h = 24 \text{ nm}$$

Surface Area =

Volume =

2.

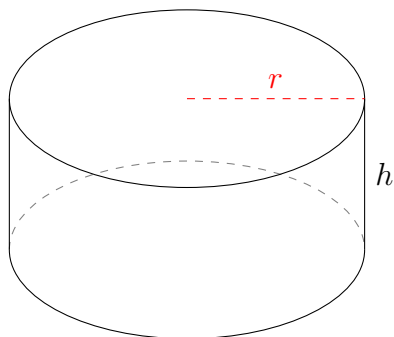


$$d = 5.2 \text{ in} \quad h = 4.8 \text{ in}$$

Surface Area =

Volume =

3.

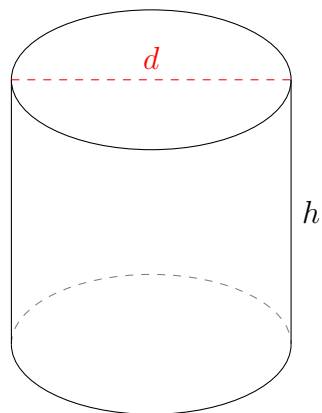


$$r = 16.45 \text{ cm} \quad h = 14 \text{ cm}$$

Surface Area =

Volume =

4.



$$d = 7.4 \text{ AU} \quad h = 7 \text{ AU}$$

Surface Area =

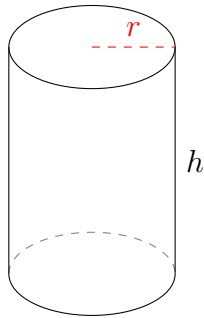
Volume =

Area and Volume of Cylinders (H) Answers

Calculate the surface area and volume for each cylinder.

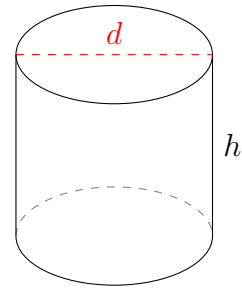
$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.



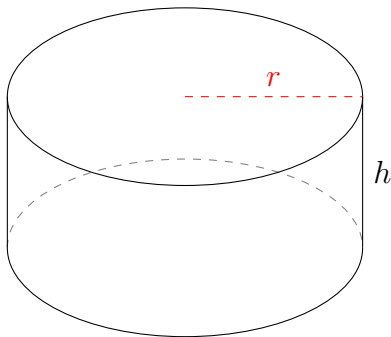
$$\begin{aligned} r &= 8.8 \text{ nm} & h &= 24 \text{ nm} \\ \text{Surface Area} &= 1813.58 \text{ nm}^2 \\ \text{Volume} &= 5838.84 \text{ nm}^3 \end{aligned}$$

2.



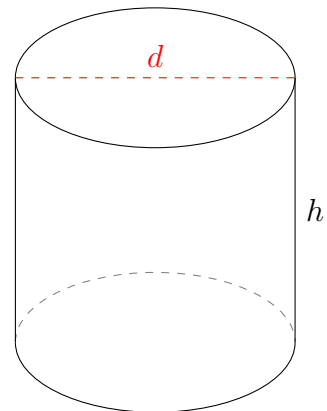
$$\begin{aligned} d &= 5.2 \text{ in} & h &= 4.8 \text{ in} \\ \text{Surface Area} &= 120.89 \text{ in}^2 \\ \text{Volume} &= 101.94 \text{ in}^3 \end{aligned}$$

3.



$$\begin{aligned} r &= 16.45 \text{ cm} & h &= 14 \text{ cm} \\ \text{Surface Area} &= 3147.26 \text{ cm}^2 \\ \text{Volume} &= 11,901.72 \text{ cm}^3 \end{aligned}$$

4.



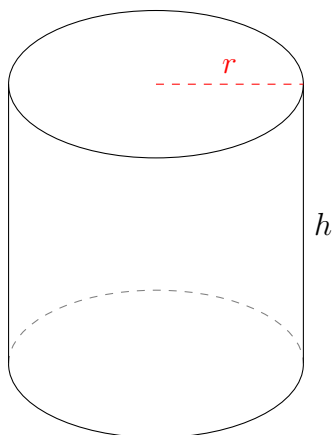
$$\begin{aligned} d &= 7.4 \text{ AU} & h &= 7 \text{ AU} \\ \text{Surface Area} &= 248.75 \text{ AU}^2 \\ \text{Volume} &= 301.06 \text{ AU}^3 \end{aligned}$$

Area and Volume of Cylinders (I)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

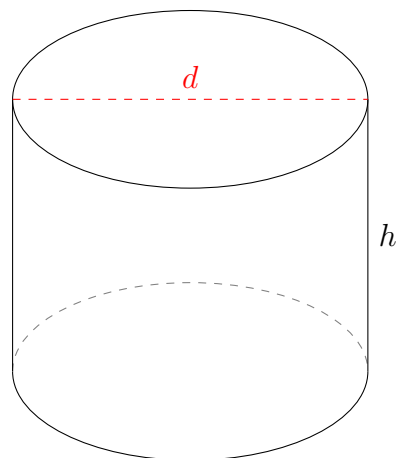


$$r = 11.7 \text{ ft} \quad h = 22.2 \text{ ft}$$

Surface Area =

Volume =

2.

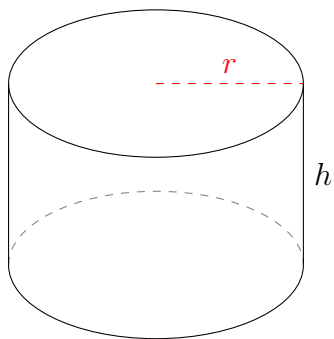


$$d = 18.8 \text{ ft} \quad h = 14.4 \text{ ft}$$

Surface Area =

Volume =

3.

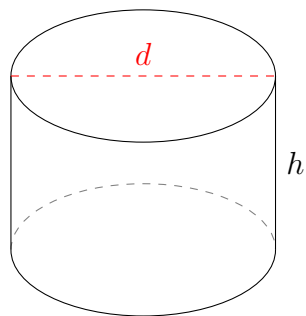


$$r = 3.9 \text{ mi} \quad h = 4.8 \text{ mi}$$

Surface Area =

Volume =

4.



$$d = 24.5 \text{ cm} \quad h = 16.1 \text{ cm}$$

Surface Area =

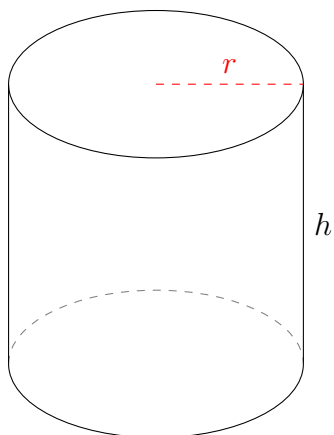
Volume =

Area and Volume of Cylinders (I) Answers

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

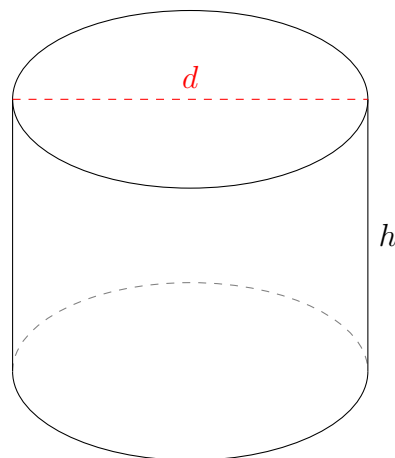


$$r = 11.7 \text{ ft} \quad h = 22.2 \text{ ft}$$

$$\text{Surface Area} = 2492.1 \text{ ft}^2$$

$$\text{Volume} = 9547.17 \text{ ft}^3$$

2.

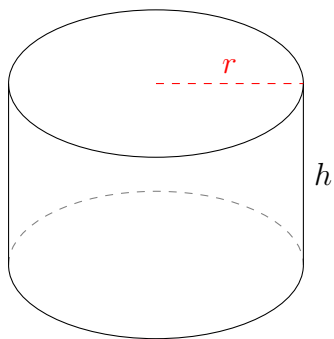


$$d = 18.8 \text{ ft} \quad h = 14.4 \text{ ft}$$

$$\text{Surface Area} = 1405.67 \text{ ft}^2$$

$$\text{Volume} = 3997.31 \text{ ft}^3$$

3.

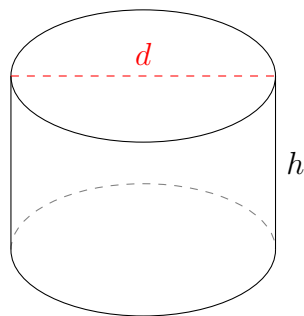


$$r = 3.9 \text{ mi} \quad h = 4.8 \text{ mi}$$

$$\text{Surface Area} = 213.19 \text{ mi}^2$$

$$\text{Volume} = 229.36 \text{ mi}^3$$

4.



$$d = 24.5 \text{ cm} \quad h = 16.1 \text{ cm}$$

$$\text{Surface Area} = 2182.07 \text{ cm}^2$$

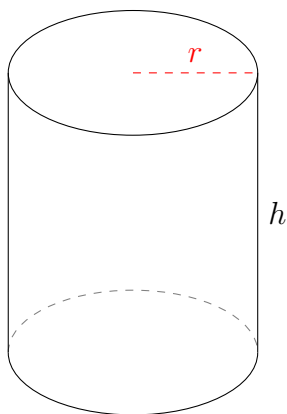
$$\text{Volume} = 7590.11 \text{ cm}^3$$

Area and Volume of Cylinders (J)

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

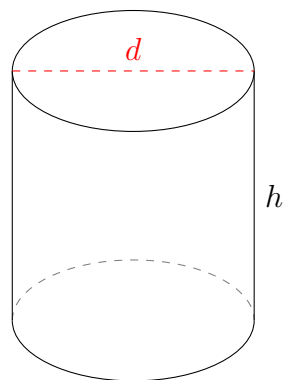


$$r = 3.3 \text{ cm} \quad h = 7.4 \text{ cm}$$

Surface Area =

Volume =

2.

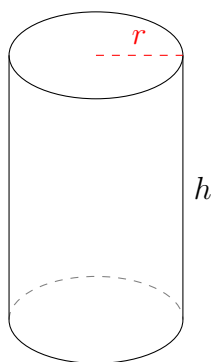


$$d = 25.6 \text{ in} \quad h = 26.4 \text{ in}$$

Surface Area =

Volume =

3.

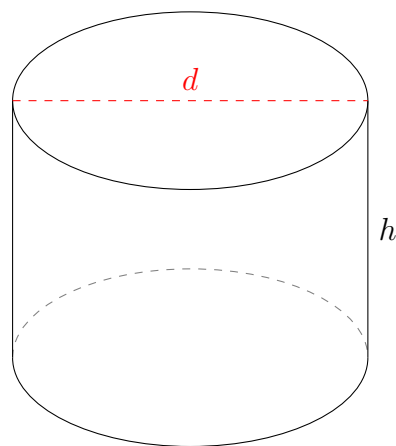


$$r = 1.15 \text{ in} \quad h = 3.5 \text{ in}$$

Surface Area =

Volume =

4.



$$d = 28.2 \text{ ft} \quad h = 20.4 \text{ ft}$$

Surface Area =

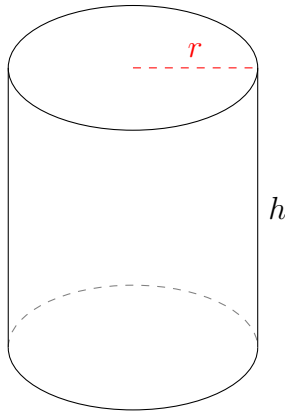
Volume =

Area and Volume of Cylinders (J) Answers

Calculate the surface area and volume for each cylinder.

$$\text{Surface Area} = (\pi r^2 \times 2) + (\pi d \times h) \quad \text{Volume} = \pi r^2 \times h \quad d = 2r$$

1.

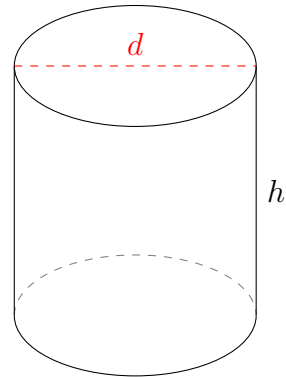


$$r = 3.3 \text{ cm} \quad h = 7.4 \text{ cm}$$

$$\text{Surface Area} = 221.86 \text{ cm}^2$$

$$\text{Volume} = 253.17 \text{ cm}^3$$

2.

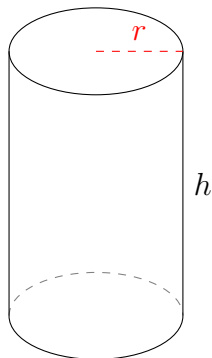


$$d = 25.6 \text{ in} \quad h = 26.4 \text{ in}$$

$$\text{Surface Area} = 3152.65 \text{ in}^2$$

$$\text{Volume} = 13,588.57 \text{ in}^3$$

3.

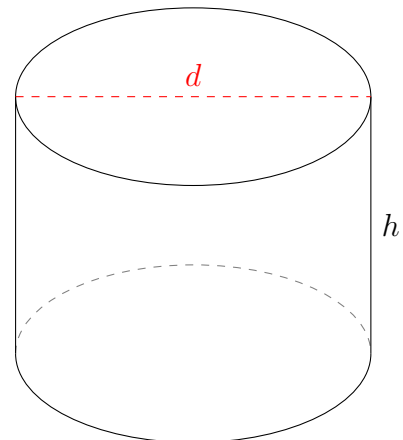


$$r = 1.15 \text{ in} \quad h = 3.5 \text{ in}$$

$$\text{Surface Area} = 33.6 \text{ in}^2$$

$$\text{Volume} = 14.54 \text{ in}^3$$

4.



$$d = 28.2 \text{ ft} \quad h = 20.4 \text{ ft}$$

$$\text{Surface Area} = 3056.46 \text{ ft}^2$$

$$\text{Volume} = 12,741.43 \text{ ft}^3$$