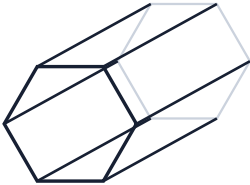


Surface Area of Solids

Find the total surface area. sqrt(n) means the square root of n. Use calculator pi, retain intermediate precision, and round the final answer to the nearest hundredth.

1. Right prism with a regular hexagonal base: Find the total surface area.



base s

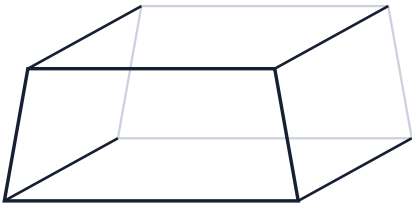
base ap.
not to scale

perp. H

Given: regular base side = 8 ft; base apothem = $8\sqrt{3}/2$ ft; prism height = 15 ft

Formula and work:

2. Right square prism: Find the total surface area.



base s

not to scale

perp. H

Given: base side = 5 yd; prism height = 7 yd

Formula and work:

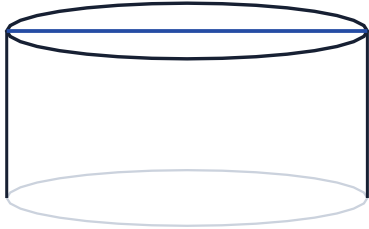
Use calculator pi. Round final answers to the nearest hundredth.
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Surface Area of Solids

Find the total surface area. sqrt(n) means the square root of n. Use calculator pi, retain intermediate precision, and round the final answer to the nearest hundredth.

3. Right cylinder: Find the total surface area.



d

perp. H

not to scale

Given: diameter = 20 in; cylinder height = 9 in

Formula and work:

4. Right pyramid with a regular hexagonal base: Find the total surface area.



base s

base ap.

perp. H

slant l

not to scale

Given: regular base side = 7 mm; base apothem = $7\sqrt{3}/2$ mm; perpendicular height = 18 mm; face slant height = $\sqrt{(18)^2 + (7\sqrt{3}/2)^2}$ mm

Formula and work:

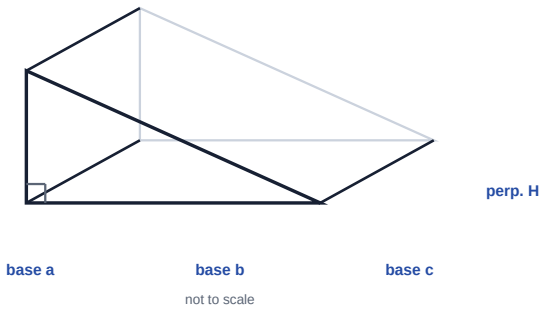
Surface Area of Solids

Find the total surface area. sqrt(n) means the square root of n. Use calculator pi, retain intermediate precision, and round the final answer to the nearest hundredth.

5. Right prism with a right-triangle base: Find the total surface area.

Given: base leg = 8 cm; base height = 15 cm; base hypotenuse = 17 cm; prism length = 11 cm

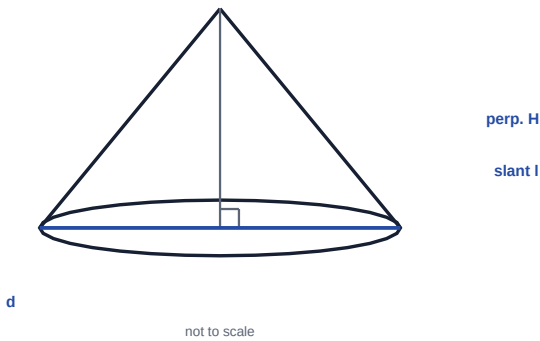
Formula and work:



6. Right cone: Find the total surface area.

Given: diameter = 8 ft; perpendicular height = 14 ft; slant height = sqrt((8/2)^2+(14)^2) ft

Formula and work:



Surface Area of Solids
Worked Answer Key

Find the total surface area. sqrt(n) means the square root of n. Use calculator pi, retain intermediate precision, and round the final answer to the nearest hundredth.

1. Right prism with a regular hexagonal base: Find the total surface area.



base s

base ap.
not to scale

perp. H

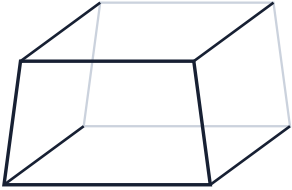
Given: regular base side = 8 ft; base apothem = $8\sqrt{3}/2$ ft; prism height = 15 ft

Total surface area: $SA = 2B + PH$

Substitute: $P=6(8)$; $B=P(8\sqrt{3}/2)/2$; $H=15$; $SA=2(6(8)(8\sqrt{3}/2)/2)+(6(8))(15)$

Answer: 1052.55 ft²

2. Right square prism: Find the total surface area.



base s

not to scale

perp. H

Given: base side = 5 yd; prism height = 7 yd

Total surface area: $SA = 2B + PH$

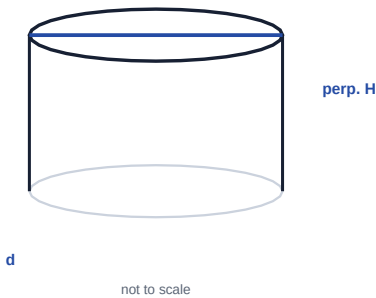
Substitute: $B=(5)^2$; $P=4(5)$; $H=7$; $SA=2((5)^2)+(4(5))(7)$

Answer: 190.00 yd²

Surface Area of Solids
Worked Answer Key

Find the total surface area. sqrt(n) means the square root of n. Use calculator pi, retain intermediate precision, and round the final answer to the nearest hundredth.

3. Right cylinder: Find the total surface area.



d

perp. H

not to scale

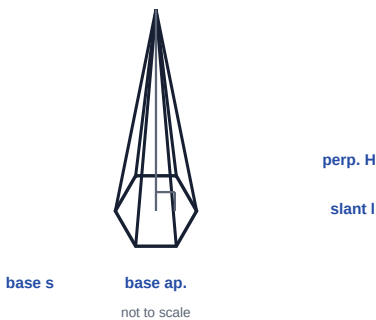
Given: diameter = 20 in; cylinder height = 9 in

Total surface area: $SA = 2\pi r^2 + 2\pi r h$

Substitute: $r=20/2$; $h=9$; $SA=2\pi(20/2)^2+2\pi(20/2)(9)$

Answer: 1193.81 in²

4. Right pyramid with a regular hexagonal base: Find the total surface area.



base s

base ap.

perp. H

slant l

not to scale

Given: regular base side = 7 mm; base apothem = $7\sqrt{3}/2$ mm; perpendicular height = 18 mm; face slant height = $\sqrt{(18)^2+(7\sqrt{3}/2)^2}$ mm

Total surface area: $SA = B + PI/2$

Substitute: $P=6(7)$; $B=P(7\sqrt{3}/2)/2$; $l=\sqrt{(18)^2+(7\sqrt{3}/2)^2}$; $SA=B+PI/2$

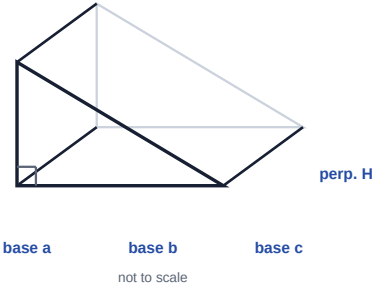
Answer: 526.17 mm²

Surface Area of Solids

Worked Answer Key

Find the total surface area. sqrt(n) means the square root of n. Use calculator pi, retain intermediate precision, and round the final answer to the nearest hundredth.

5. Right prism with a right-triangle base: Find the total surface area.



base a base b base c

not to scale

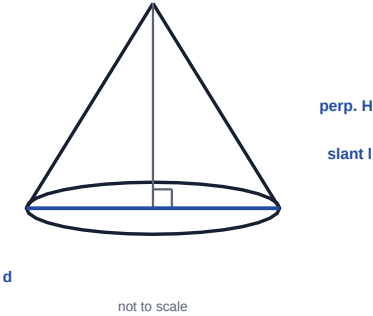
Given: base leg = 8 cm; base height = 15 cm; base hypotenuse = 17 cm; prism length = 11 cm

Total surface area: $SA = 2B + PH$

Substitute: $B = \frac{(8)(15)}{2}$; $P = 8 + 15 + 17$; $H = 11$; $SA = 2(\frac{(8)(15)}{2}) + (8 + 15 + 17)(11)$

Answer: 560.00 cm²

6. Right cone: Find the total surface area.



d

not to scale

Given: diameter = 8 ft; perpendicular height = 14 ft; slant height = $\sqrt{(\frac{8}{2})^2 + (14)^2}$ ft

Total surface area: $SA = \pi r^2 + \pi r l$

Substitute: $r = \frac{8}{2}$; $h = 14$; $l = \sqrt{(\frac{8}{2})^2 + (14)^2}$; $SA = \pi(\frac{8}{2})^2 + \pi(\frac{8}{2})(\sqrt{(\frac{8}{2})^2 + (14)^2})$

Answer: 233.23 ft²

Use calculator pi. Round final answers to the nearest hundredth.
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