Curriculum Outcome

(N5) Determine the square root of positive rational numbers that are perfect squares.

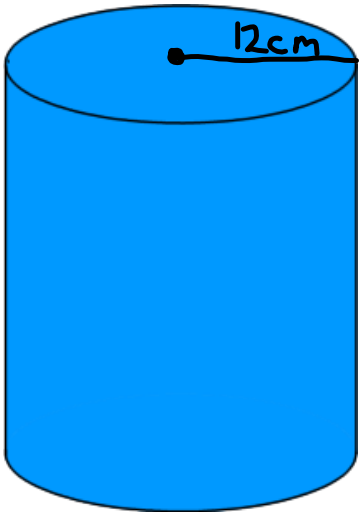
(N6) Determine an approximate square root of positive rational numbers that are non-perfect squares.

(SS2) Determine the surface area of composite 3-D objects to solve problems

(N4) **Explain and apply the order of operations, including exponents, with and without technology.**

A cylinder has a base radius of 12cm and a height of 15cm. Determine the surface area of the cylinder.

(Hint: Sketch a diagram and state the formula)



$r = 12$

$h = 15$

$SA = 2\pi r^2 + 2\pi r h$

$SA = 2(3.14)(12)^2 + 2(3.14)(12)(15)$

$SA = 2(3.14)(144) + 2(3.14)(12)(15)$

$SA = 904.32 + 1130.4$

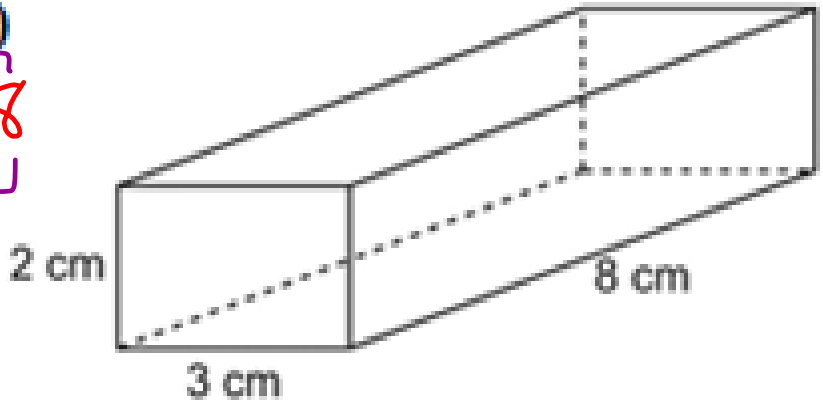
$SA = 2034.72\ cm^2$

Check

1. Calculate the surface area of each object

a)

2, 3, 8



2 | 2 | 3
3 | 8 | 8

$A = b \times h$

$A = 3 \times 2$

$A = 6$

$2A = 12cm^2$

$A = b \times h$

$A = 2 \times 8$

$A = 16$

$2A = 32cm^2$

$A = b \times h$

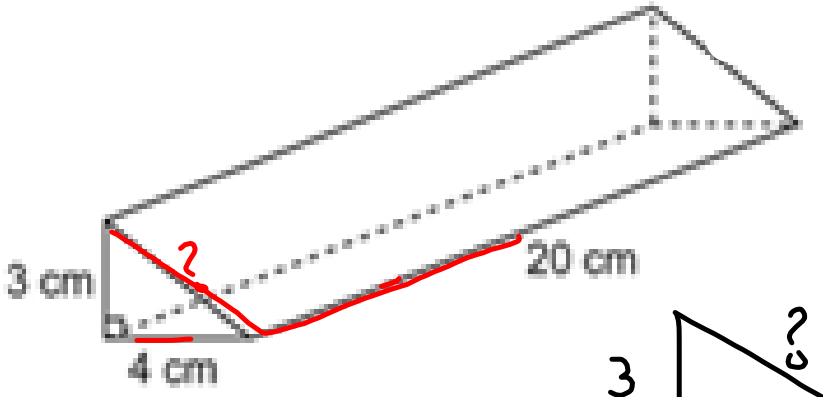
$A = 3 \times 8$

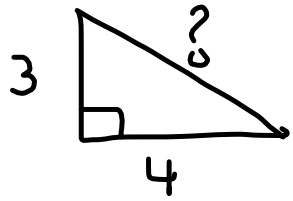
$A = 24$

$2A = 48cm^2$

$TSA = 12 + 32 + 48$

$= 92cm^2$





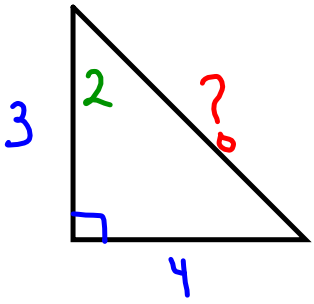
$c^2 = a^2 + b^2$

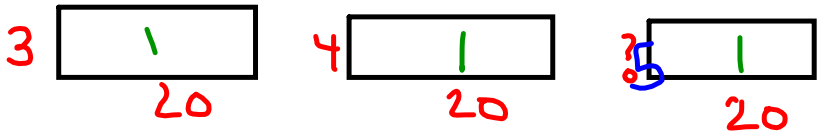
$c^2 = 3^2 + 4^2$

$c^2 = 9 + 16$

$c^2 = 25$

$c = 5$





$A = \frac{b \times h}{2}$

$A = \frac{3 \times 4}{2}$

$A = 6\ cm^2$

$A = b \times h$

$A = 3 \times 20$

$A = 60\ cm^2$

$A = b \times h$

$A = 4 \times 20$

$A = 80\ cm^2$

$A = b \times h$

$A = 5 \times 20$

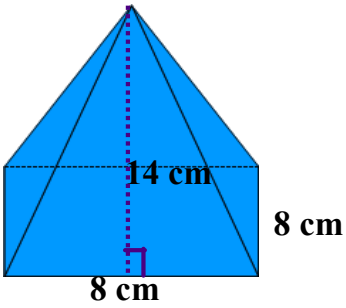
$A = 100\ cm^2$

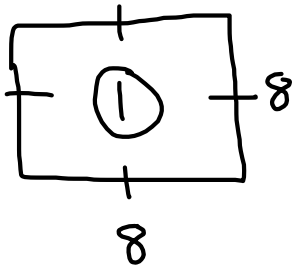
$2A = 12\ cm^2$

$TSA = 12 + 60 + 80 + 100$

$= 252\ cm^2$

What is the surface area of the following shape?

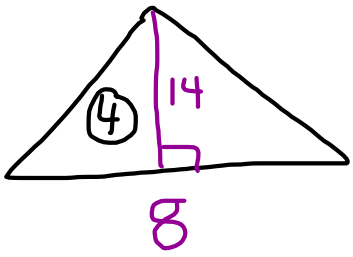




$A = b \times h$

$A = 8 \times 8$

$A = 64 cm^2$



$A = \frac{b \times h}{2}$

$A = \frac{8 \times 14}{2}$

$A = 56 cm^2$

$4A = 224 cm^2$

$TSA = 64 + 224$

$= 288 cm^2$

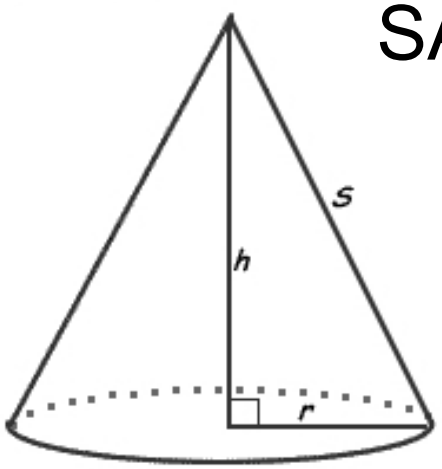
Cone

Surface Area

We will need to calculate the surface area of the cone and the base.

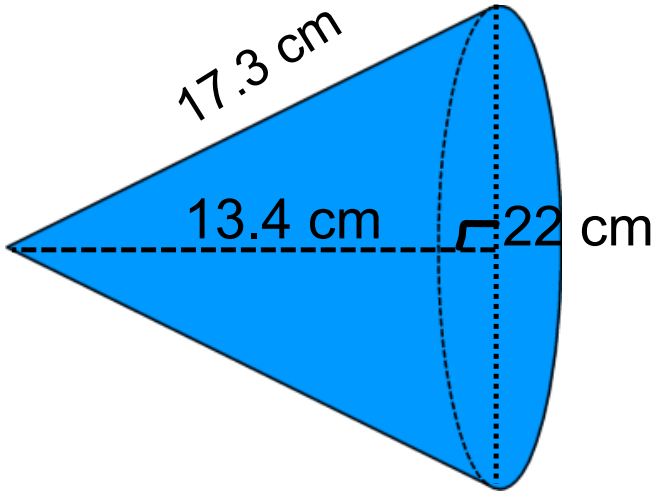
Area of the cone is πrs

Area of the base is πr^2



circle side

$$SA = \pi r^2 + \pi r s$$



$SA = \pi r^2 + \pi r s$

$SA = 3.14(11)^2 + 3.14(11)(17.3)$

$SA = 3.14(121) + 3.14(11)(17.3)$

$SA = 379.94 + 597.54$

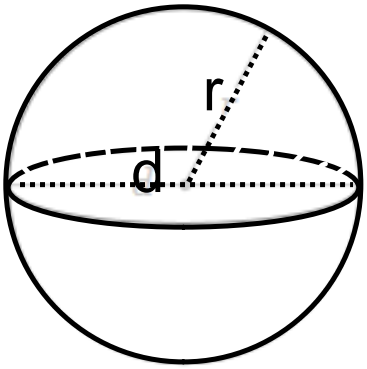
$SA = 977.5\ cm^2$

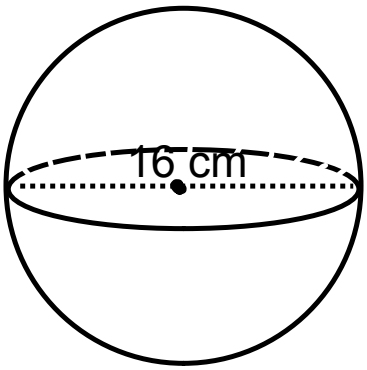
Sphere

Solve for surface area

$$A = 4\pi r^2$$

r Radius Enter value





$A = 4\pi r^2$

$A = 4(3.14)(8)^2$

$A = 4(3.14)(64)$

$A = 803.84\ cm^2$

Worksheet

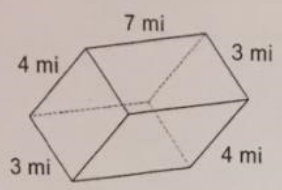
Questions 1, 2, 3,4, 5,7, 12

Surface Area Review

Date__

Find the surface area of each figure. Round to the nearest tenth.

1)



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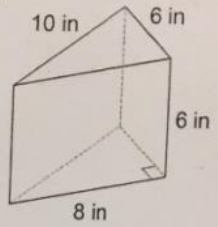

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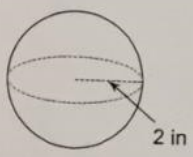

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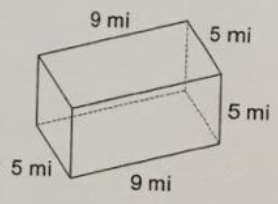

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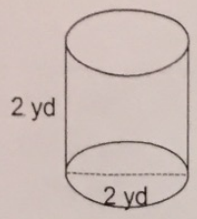

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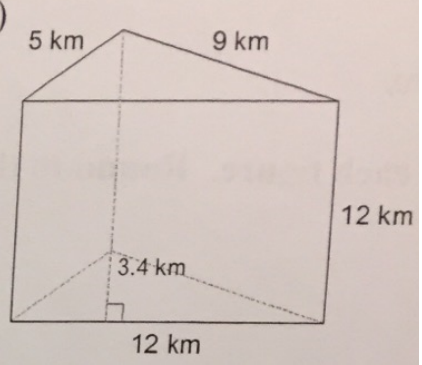

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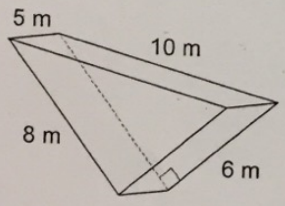

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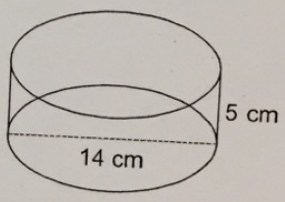

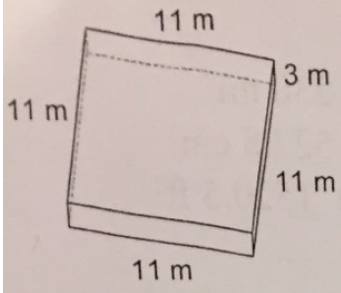

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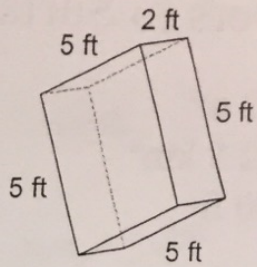

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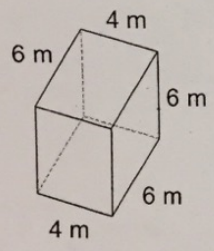

12)