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.**

Class/ Homework

You seen how I showed all my work with last nights homework, you must do the same for this worksheet. (No shortcuts)

Name _____ Date _____

Master 1.18

Extra Practice 3

Lesson 1.3: Surface Areas of Objects Made from Right Rectangular Prisms

1. Each cube has edge length 2 unit.
Determine the surface area of each object.

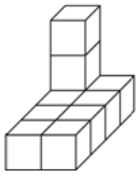
a)

88 squared units

b)

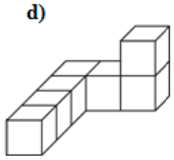
72 squared units

c)



144 squared units

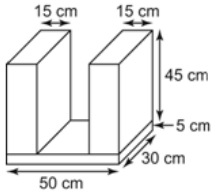
d)



120 squared units

2. Each edge of a linking cube is 1 unit long. Build a composite object with 7 linking cubes. Exchange objects with a classmate. Determine the surface area of your classmate's object. Check each other's work.

3. Determine the surface area of this composite object.

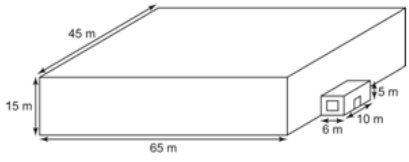


11 900 cm^2

4. The local curling rink is shown in the diagram at the right. It is to be painted.

a) Determine the surface area of the structure.

b) The roof, windows, and door are not to be painted. The door is 1 m by 2 m and the window is 4 m by 2 m. Determine the surface area to be painted.

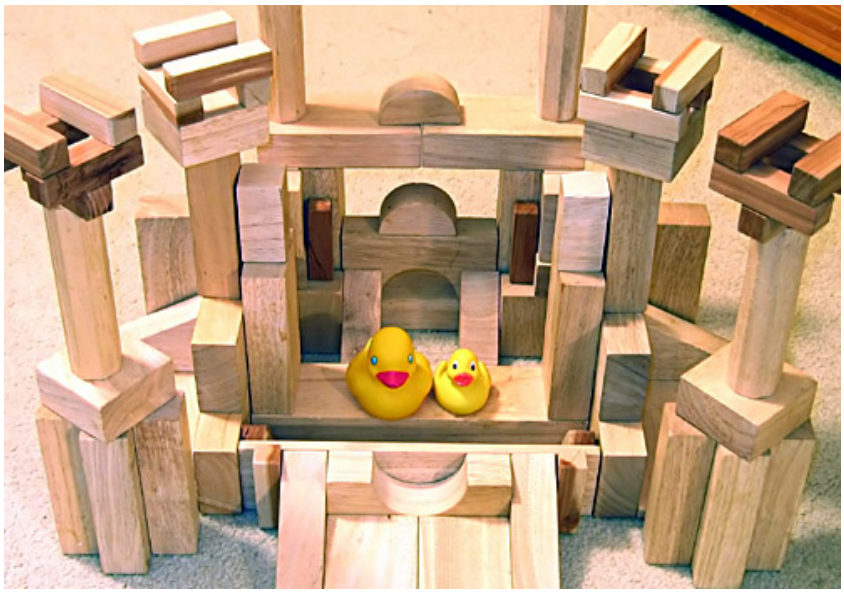


c) A can of paint covers 300 m^2 and costs $45. Determine the cost of the paint needed.

Section 1.4

Surface Area Of Other Composite Objects

Surface area????



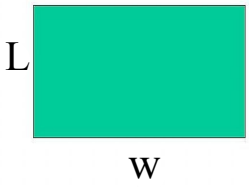
Other Composite Shapes

3-D shapes sitting on other 3-D shapes (This will cause an overlap meaning that the entire two or more shapes are not exposed to the surface

Area of Shapes

Area of a Rectangle

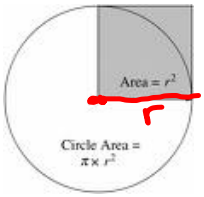
A = length x width



Area of a Circle

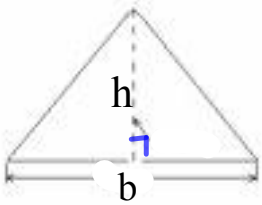
$A = \pi r^2$

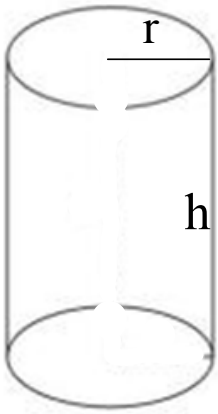
$= (3.14)(r)^2$



Area of Triangle

$A = \frac{(\text{base x height})}{2}$

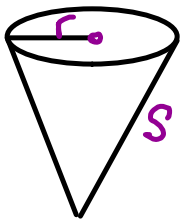




2 circles + rectangle

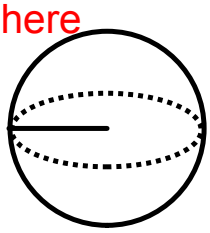
$SA\ Cylinder = 2\pi r^2 + 2\pi rh$

Cone



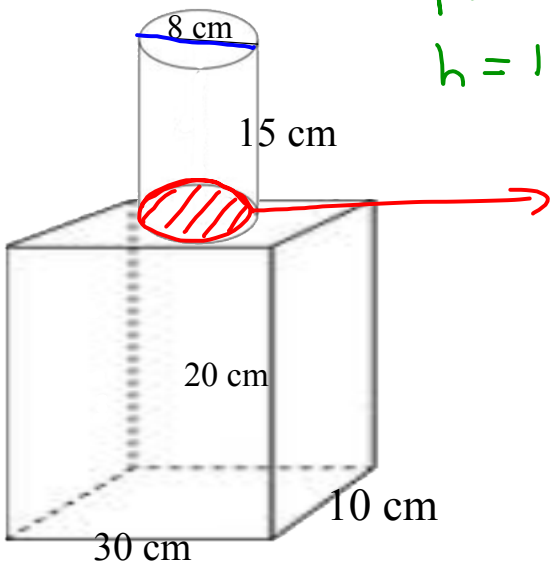
$SA = \pi r^2 + \pi r s$

Sphere



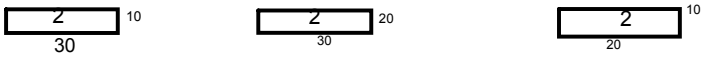
$SA = 4\pi r^2$

How much paint is needed to cover the following shape?



r = 4
h = 15
overlap
2 circles

Rectangular Prism 30 X 10 x 20



Top

A =b×h
A = 30 cm x 10 cm
= 300 cm^2
2(300cm^2)
600 cm^2

A= bxh
A = 20 cm x 30 cm
= 600 cm^2
2(600cm^2)
1200cm^2

A=b xh
A = 10 cm x 20 cm
= 200 cm^2
2(200cm^2)
400cm^2

Total SA small = 2Top +2Side +2Front

= 600 cm^2 + 1200cm^2 + 400cm^2
= 2200cm^2

Cylinder

Area of Cylinder = $2\pi r^2 + 2\pi rh$

overlap

= 2(3.14) (4)^2 + 2(3.14) (4) (15)
= 2(3.14) (16) + 2(3.14) (4) (15)
= 100.48 + 376.8
= 477.28

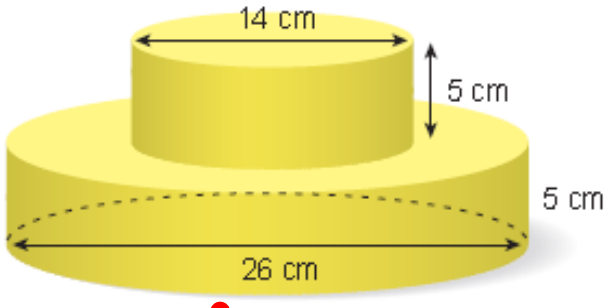
Total Surface Area = cylinder + Prism - Overlap area

= 477.28 + 2200 cm^2 - 100.48 cm^2

= 2677.28 cm^2 - 100.48 cm^2

= 2576.8 cm^2

1689.32 cm^2



Big ($r = 13$ $h = 5$)

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

$= 2(3.14)(13)^2 + 2(3.14)(5)$

$= 1061.32 + 408.2$

$= 1469.52$

Small ($r = 7$ $h = 5$)

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

$SA = 2(3.14)(7)^2 + 2(3.14)(7)(5)$

$SA = 307.72 + 219.8$

$= 527.52$

$TSA = 1469.52 + 527.52 - 307$

$= 1689.32\ cm^2$

Class / Homework

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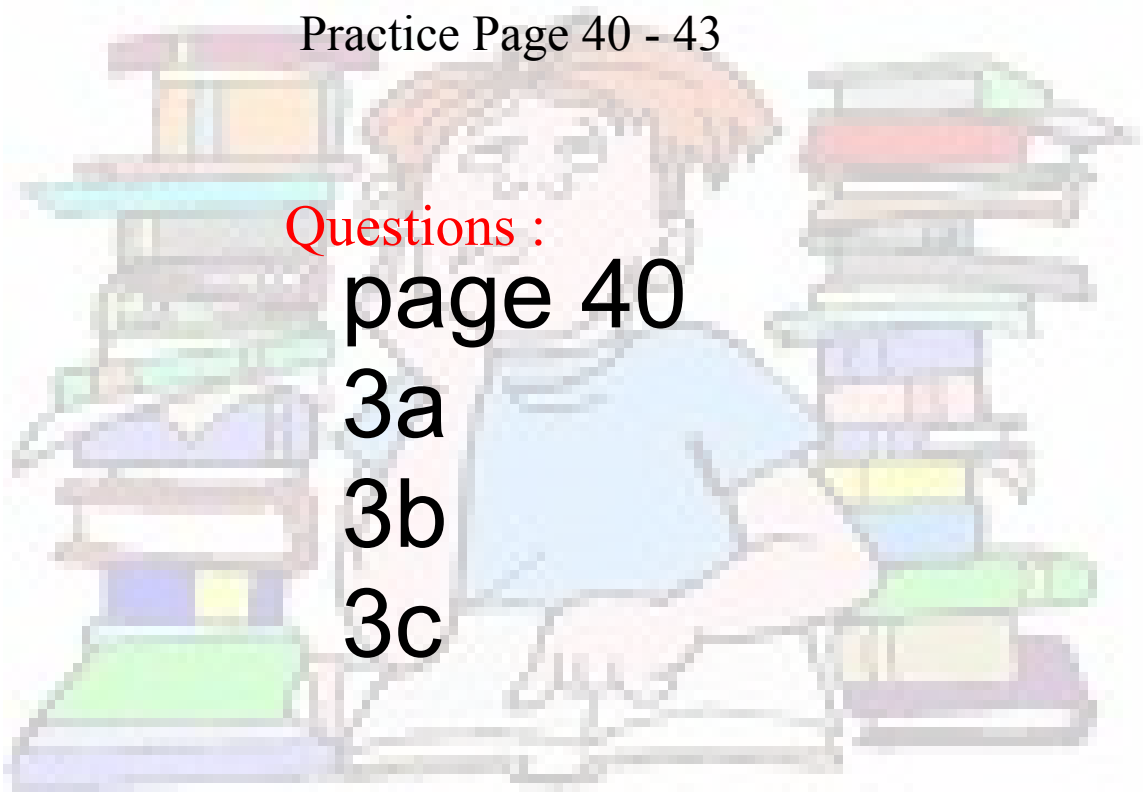

Questions :

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3a

3b

3c