

Class / Homework
Review For Test

- Handout: Surface Area Worksheet

Questions: 1-6

answers were on the board

- Questions from Textbook:

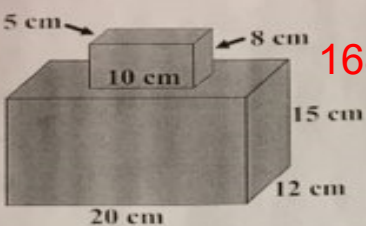
page 45 - 46

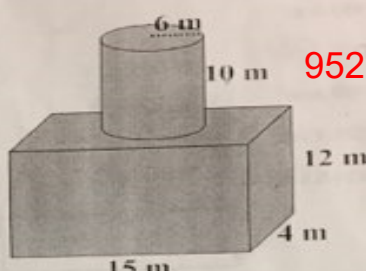
#1	# 12ac
#2(b, d, f, h)	#13ab
#3(a,b,c,d,e)	#15(bc)
#4(a,d)	#16(bc)
#5 (a, c, e)	#19(a)
#6 (b,d)	
#9	

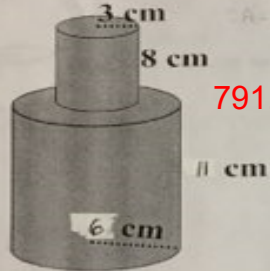
and the Warehouse question

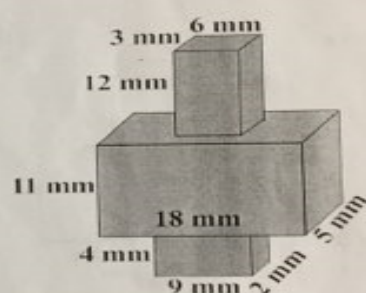
UNIT 3 ASSIGNMENT – SURFACE AREA OF COMPOSITE OBJECTS

Determine the surface area of each composite object. Round answers to the nearest tenth, where necessary. Show ALL work on loose-leaf.

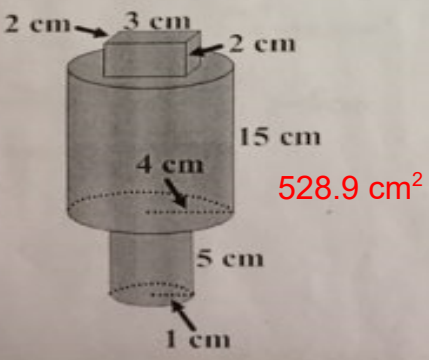
- 

1680 cm²
- 

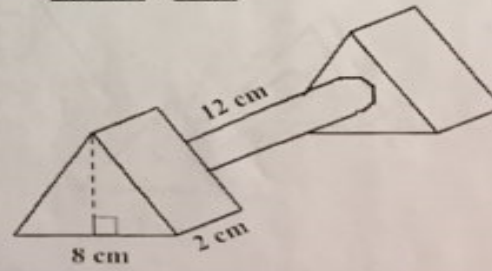
952.8 m²
- 

791.3 cm²
- 

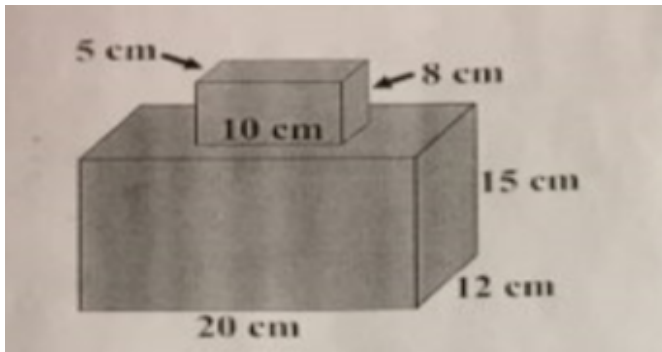
990 mm²
- The cylinder below is connected to two IDENTICAL EQUILATERAL TRIANGULAR prisms. The cylinder's diameter is 10 cm.



528.9 cm²



426.8 cm²



total surface

1. Small rectangular prism (5, 10, 8)

Front / Back	Side / Side	Top / Bottom	
$A = L \times w$	$A = L \times w$	$A = L \times w$	$SA = 160 + 80 + 100$ $= 340 \text{ cm}^2$
$= 8 \times 10$	$= 5 \times 8$	$= 5 \times 10$	
$= 80$	$= 40$	$= 50$	
$\frac{\times 2}{160}$	$\frac{\times 2}{80}$	$\frac{\times 2}{100}$	

Large rectangular Prism (20, 12, 15)

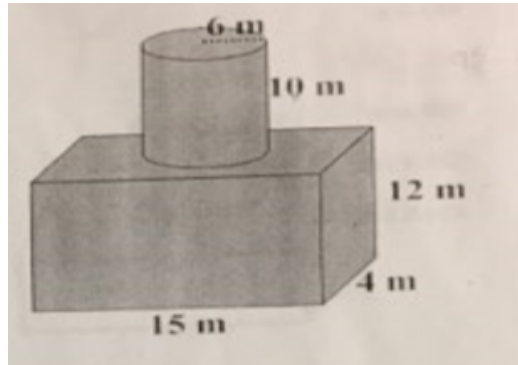
Front / Back	Side / Side	Top / Bottom	
$A = L \times w$	$A = L \times w$	$A = L \times w$	$SA = 600 + 360 + 480$ $= 1440 \text{ cm}^2$
$= 20 \times 15$	$= 12 \times 15$	$= 20 \times 12$	
$= 300$	$= 180$	$= 240$	
$\frac{\times 2}{600}$	$\frac{\times 2}{360}$	$\frac{\times 2}{480}$	

Total Surface Area

$$= \text{Small} + \text{Large} - \text{overlap}$$

$$340 + 1440 - 100$$

$$\underline{\underline{1680 \text{ cm}^2}}$$



2. Cylinder overlap

$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi r h \\
 &= 2(3.14)(6)^2 + 2(3.14)(6)(10) \\
 &= 2(3.14)(36) + 376.8 \\
 &= 226.08 + 376.8 \\
 &= 602.88 \text{ m}^2
 \end{aligned}$$

Rectangular Prism (15, 4, 12)

Front/Back

$$\begin{aligned}
 A &= L \times w \\
 &= 15 \times 4 \\
 &= 60 \\
 &\quad \times 2 \\
 &= 120
 \end{aligned}$$

Side/Side

$$\begin{aligned}
 A &= L \times w \\
 &= 12 \times 4 \\
 &= 48 \\
 &\quad \times 2 \\
 &= 96
 \end{aligned}$$

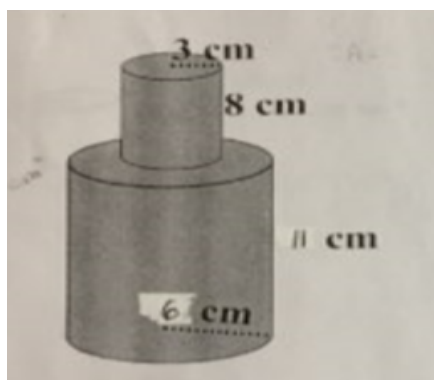
Top/Bottom

$$\begin{aligned}
 A &= L \times w \\
 &= 15 \times 4 \\
 &= 180 \\
 &\quad \times 2 \\
 &= 360
 \end{aligned}$$

$$\begin{aligned}
 SA &= 120 \\
 &\quad 96 \\
 &\quad \underline{+ 360} \\
 &= 576 \text{ m}^2
 \end{aligned}$$

Total Surface Area = Cylinder + Rectangular Prism - Overlap

$$\begin{aligned}
 &= 602.88 + 576 - 226.08 \\
 &= 952.8 \text{ m}^2
 \end{aligned}$$



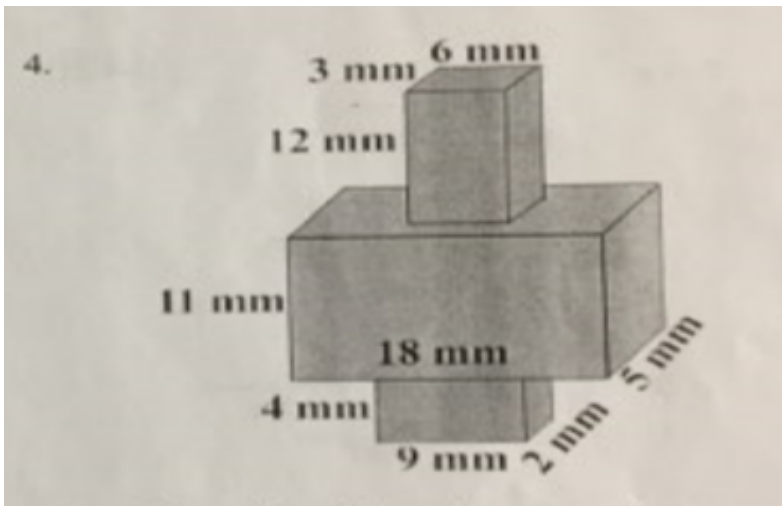
3. Small Cylinder

$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi r h \\
 &= 2(3.14)(3)^2 + 2(3.14)(3)(8) \\
 &= 2(3.14)(9) + 150.72 \\
 &= 56.52 + 150.72 \\
 &= 207.24 \text{ Km}^2
 \end{aligned}$$

Large Cylinder

$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi r h \\
 &= 2(3.14)(6)^2 + 2(3.14)(6)(11) \\
 &= 2(3.14)(36) + 414.48 \\
 &= 226.08 + 414.48 \\
 &= 640.56 \text{ Km}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{Total Surface Area} &= \text{Small Cylinder} + \text{Large} - \text{overlap} \\
 &= 207.24 + 640.56 - 56.52 \\
 &= 791.3 \text{ Km}^2
 \end{aligned}$$



4) Top (3 mm x 6 mm x 12 mm)

overlap

$A = b \times h$
 $A = 6 \times 3$
 $A = 18$
 $2A = 36 \text{ mm}^2$

$A = b \times h$
 $A = 6 \times 12$
 $A = 72$
 $2A = 144 \text{ mm}^2$

$A = b \times h$
 $A = 3 \times 12$
 $A = 36 \text{ mm}$
 $2A = 72 \text{ mm}$

$$SA = 36 + 144 + 72 = 252 \text{ mm}^2$$

Middle (11 mm x 18 mm x 5 mm)

$A = b \times h$
 $A = 18 \times 11$
 $A = 198$
 $2A = 396 \text{ mm}$

$A = b \times h$
 $A = 5 \times 11$
 $A = 55$
 $2A = 110 \text{ mm}^2$

$A = b \times h$
 $A = 18 \times 5$
 $A = 90 \text{ mm}$
 $2A = 180 \text{ mm}$

$$SA = 396 + 110 + 180 = 686 \text{ mm}^2$$

Bottom (4 mm x 9 mm x 2 mm)

$A = b \times h$
 $A = 4 \times 9$
 $A = 36 \text{ mm}$
 $2A = 72 \text{ mm}$

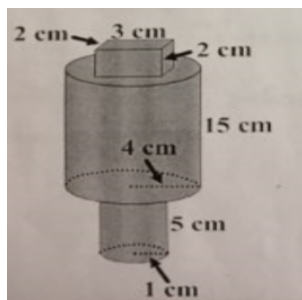
$A = b \times h$
 $A = 4 \times 2$
 $A = 8$
 $2A = 16 \text{ mm}$

overlap

$A = b \times h$
 $A = 9 \times 2$
 $A = 18$
 $A = 36 \text{ mm}$

$$SA = 72 + 36 + 16 = 124 \text{ mm}$$

$$\begin{aligned}
 TSA &= 252 + 686 + 124 - 36 - 36 \\
 &= 1062 - 72 \\
 &= 990 \text{ mm}^2
 \end{aligned}$$



5) Rectangle Prism ($2 \times 3 \times 2$) $A = b \times h$

$$A = 2 \times 3$$

$$A = 6 \text{ cm}^2$$

$$2A = 12 \text{ cm}^2$$

Overlap

$$A = 2 \times 3$$

$$A = 6 \text{ cm}^2$$

$$2A = 12 \text{ cm}^2$$

$$A = 2 \times 2$$

$$A = 4 \text{ cm}^2$$

$$2A = 8 \text{ cm}^2$$

$$SA_1 = 12 + 12 + 8 \\ = 32 \text{ cm}^2$$

Middle cylinder

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

$$= 2(3.14)(4)^2 + 2(3.14)(4)(15)$$

$$= 100.48 + 376.8$$

$$SA_2 = 477.28 \text{ cm}^2$$

Small cylinder overlap

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

$$= 2(3.14)(1)^2 + 2(3.14)(1)(5)$$

$$= 6.28 + 31.4$$

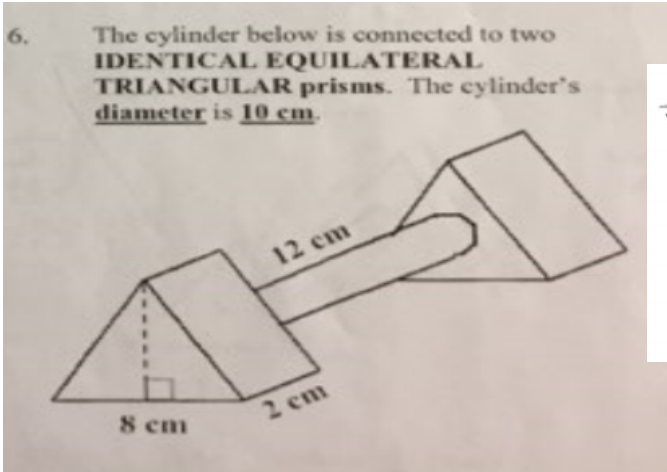
$$SA = 37.68$$

$$TSA = SA_1 + SA_2 + SA_3 - \text{overlaps} - \text{overlaps}$$

$$= 32 + 477.28 + 37.68 - 12 - 6.28$$

$$= 546.96 - 18.28$$

$$= 528.68 \text{ cm}^2$$



Cylinder

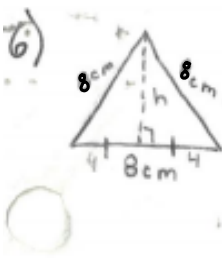
$$SA = 2\pi r^2 + 2\pi rh$$

$$SA = 2(3.14)(5)^2 + 2(3.14)(5)(12)$$

$$SA = 2(3.14)(25) + 2(3.14)(60)$$

$$SA = 157 + 376.8$$

$$SA = 533.8 \text{ cm}^2$$



height

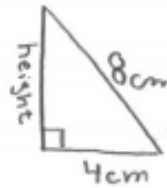
$$a^2 = c^2 - b^2$$

$$a^2 = 8^2 - 4^2$$

$$a^2 = 64 - 16$$

$$\sqrt{a^2} = \sqrt{48}$$

$$a = 6.9 \text{ cm}$$



Triangular Prism



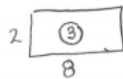
$$A = \frac{b \times h}{2}$$

$$A = \frac{8 \times 6.9}{2}$$

$$A = \frac{55.2}{2}$$

$$A = 27.6 \text{ cm}^2$$

$$2A = 55.2 \text{ cm}^2$$



$$A = b \times h$$

$$A = 2 \times 8$$

$$A = 16 \text{ cm}^2$$

$$3A = 48 \text{ cm}^2$$

$$SA = 2 \text{ Triangles} + 3 \text{ rectang}$$

$$= 55.2 \text{ cm}^2 + 48 \text{ cm}^2$$

$$SA = 103.2 \text{ cm}^2$$

There are 2 triangle prisms that are the exact same

$$2SA = 206.4 \text{ cm}^2$$

overlap (4 circles)

$$A = \pi r^2$$

$$A = 3.14(5)^2$$

$$A = 3.14(25)$$

$$A = 78.5$$

$$4A = 314 \text{ cm}^2$$

$$TSA = 2 \text{ Triangle prisms} + \text{cylinder} - \text{overlap}$$

$$= 206.4 \text{ cm}^2 + 533.8 \text{ cm}^2 - 314 \text{ cm}^2$$

$$= 426.2 \text{ cm}^2$$

1) determine the value of the square root.

a) $\sqrt{1.21}$

$$\sqrt{\frac{121}{100}}$$

$$= \frac{11}{10}$$

b) $\sqrt{\frac{9}{25}}$

$$\frac{3}{5}$$

c) $\sqrt{0.64}$

$$\sqrt{\frac{64}{100}} = \frac{8}{10}$$

d) $\sqrt{\frac{81}{16}}$
$$\frac{9}{4}$$

e) $\sqrt{2.56}$
$$\sqrt{\frac{256}{100}} = \frac{16}{10}$$

f) $\sqrt{\frac{1}{36}}$
$$\frac{1}{6}$$

g) $\sqrt{0.25}$
$$\sqrt{\frac{25}{100}}$$

$$\frac{5}{10}$$

h) $\sqrt{\frac{100}{64}}$
$$= \frac{10}{8}$$

i) $\sqrt{3.61}$
$$\sqrt{\frac{361}{100}} = \frac{19}{10}$$

j) $\sqrt{\frac{4}{121}}$
$$\frac{2}{11}$$

k) $\sqrt{2.89}$
$$\sqrt{\frac{289}{100}}$$

$$\frac{17}{10}$$

l) $\sqrt{\frac{36}{49}}$
$$\frac{6}{7}$$

2. Determine each square root.

$$\text{a) } \sqrt{\frac{144}{25}}$$
$$\frac{12}{5}$$

$$\text{b) } \sqrt{\frac{225}{64}}$$
$$\frac{15}{8}$$

$$\text{c) } \sqrt{\frac{196}{81}}$$
$$\frac{14}{9}$$

$$\text{d) } \sqrt{\frac{324}{121}}$$
$$\frac{18}{11}$$

$$\text{e) } \sqrt{0.0196}$$

$$\sqrt{\frac{196}{10000}}$$
$$\frac{14}{100}$$

$$\text{f) } \sqrt{0.0289}$$

$$\sqrt{\frac{289}{10000}}$$
$$\frac{17}{100}$$

$$\text{g) } \sqrt{1.69}$$

$$\sqrt{\frac{169}{100}}$$
$$\frac{13}{10}$$

$$\text{h) } \sqrt{4.41}$$

$$\sqrt{\frac{441}{100}}$$
$$\frac{21}{10}$$

3. Which fractions and decimals are perfect squares? Explain your reasoning.

$$\text{a) } \frac{48 \div 3}{120 \div 3} = \frac{\sqrt{16}}{\sqrt{40}}$$

$$\frac{4}{?}$$

Not
P.S

$$\text{b) } 1.6$$

$$\sqrt{\frac{16}{10}} = \frac{4}{?}$$

Not
P.S

$$\text{c) } \sqrt{\frac{49}{100}}$$

$$= \frac{7}{10}$$

P.S

$$\text{d) } 0.04$$

$$\sqrt{\frac{4}{100}}$$

$$= \frac{2}{10}$$

P.S

$$\text{e) } \sqrt{\frac{144}{24}}$$

$$\frac{12}{?}$$

Not
P.S

$$\text{f) } 2.5$$

$$\sqrt{\frac{25}{10}} = \frac{5}{?}$$

Not P.S

$$\text{g) } \sqrt{\frac{50}{225}} = \frac{?}{15}$$

Not
P.S

$$\text{h) } 1.96$$

$$\sqrt{\frac{196}{100}}$$

$$\frac{14}{10}$$

P.S

$$\text{i) } \frac{63 \div 7}{28 \div 7} = \sqrt{\frac{9}{4}} = \frac{3}{2}$$

P.S

4. Calculate the number whose square root is:

a) $\frac{3}{5}$

$$(\sqrt{x})^2 = \left(\frac{3}{5}\right)^2$$

$$x = \frac{9}{25}$$

b) 1.6

$$(\sqrt{x})^2 = (1.6)^2$$

$$x = 2.56$$

c) $\frac{9}{7}$

$$(\sqrt{x})^2 = \left(\frac{9}{7}\right)^2$$

$$x = \frac{81}{49}$$

d) 0.8

$$(\sqrt{x})^2 = (0.8)^2$$

$$x = 0.64$$

$$A = b^2$$

$$b = \sqrt{\text{area}}$$

5. Determine the side length of a square with each area below.

a) $\sqrt{0.81 \text{ m}^2}$

$$= 0.9$$

b) $\sqrt{0.01 \text{ m}^2}$

$$x = 0.1$$

c) $\sqrt{4.84 \text{ cm}^2}$

$$x = 2.2$$

d) $\sqrt{6.25 \text{ cm}^2}$

$$x = 2.5$$

e) $\sqrt{0.16 \text{ km}^2}$

$$x = 0.4$$

f) $\sqrt{1.44 \text{ km}^2}$

$$x = 1.2$$

6. Use benchmarks to approximate each square root to the nearest tenth. State the benchmarks you used.

a) $\sqrt{3.8}$

$\sqrt{1}$ $\sqrt{4}$

1 2

↓

$\boxed{1.8}$

b) $\sqrt{33.8}$

$\sqrt{25}$ $\sqrt{36}$

5 6

↓

$\boxed{5.8}$

c) $\sqrt{133.8}$

$\sqrt{121}$ $\sqrt{144}$

11 12

↓

$\boxed{11.6}$

d) $\sqrt{233.8}$

$\sqrt{225}$ $\sqrt{256}$

15 16

↓

$\boxed{15.2}$

9. Which of the following square roots are correct to the nearest tenth? How do you know? Correct the square roots that are incorrect.

a) $\sqrt{2.4} \doteq 1.5$
correct

b) $\sqrt{1.6} \doteq 0.4$
Wrong
 $= 1.3$

c) $\sqrt{156.8} \doteq 15.6$
Wrong
 $= 12.5$

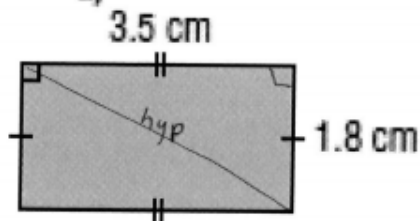
d) $\sqrt{47.8} \doteq 6.9$
correct

e) $\sqrt{0.5} \doteq 0.7$
Correct

f) $\sqrt{0.7} \doteq 0.5$
Wrong
 0.8

12. Determine the length of a diagonal of each rectangle.

a)



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

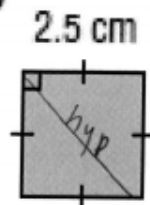
$$c^2 = (3.5)^2 + (1.8)^2$$

$$c^2 = 12.25 + 3.24$$

$$\sqrt{c^2} = \sqrt{15.49}$$

$$c = 3.9$$

b)



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

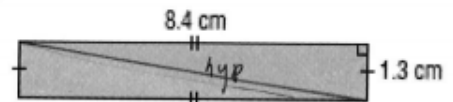
$$c^2 = (2.5)^2 + (2.5)^2$$

$$c^2 = 6.25 + 6.25$$

$$\sqrt{c^2} = \sqrt{12.5}$$

$$c = 3.54$$

c)



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

$$c^2 = (8.4)^2 + (1.3)^2$$

$$c^2 = 70.56 + 1.69$$

$$\sqrt{c^2} = \sqrt{72.25}$$

$$c = 8.5$$

13. Determine a decimal or a fraction whose square root is between each pair of numbers.

a) $\frac{1}{3}$ and 1

$$\sqrt{x} = \frac{1}{3} \quad \sqrt{y} = 1$$

$$x = \frac{1}{9} \quad y = \frac{9}{9}$$

$$\boxed{\frac{2}{9} \quad \frac{3}{9}}$$

b) 0.2 and 0.3

$$\sqrt{x} = 0.2 \quad \sqrt{y} = 0.3$$

$$x = 0.04$$

$$y = 0.09$$

$$\boxed{0.05 \\ 0.06}$$

14. a) Use a calculator to approximate each square root.

$$\text{i) } \sqrt{0.0015} \\ \approx 0.04$$

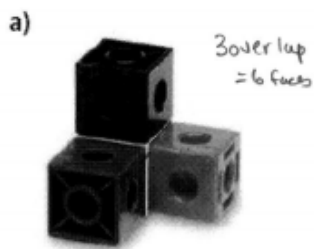
$$\text{ii) } \sqrt{0.15} \\ \approx 0.39$$

$$\text{iii) } \sqrt{15} \\ \approx 3.9$$

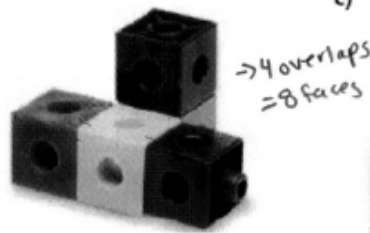
$$\text{iv) } \sqrt{1500} \\ \approx 38.7$$

$$\text{v) } \sqrt{150\,000} \\ \approx 387.3$$

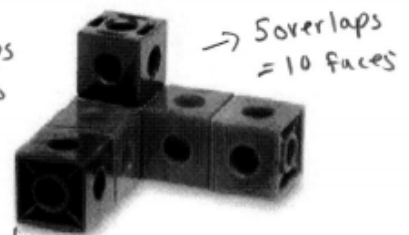
15. Each object is built with 1-cm cubes.
Determine its surface area. b)



$$\begin{array}{r}
 4 \text{ cubes} \times 6 = 24 \text{ faces} \\
 - 6 \text{ faces} \\
 \hline
 18 \text{ faces} \\
 \times 1 \text{ cm}^2 \\
 \hline
 18 \text{ cm}^2
 \end{array}$$



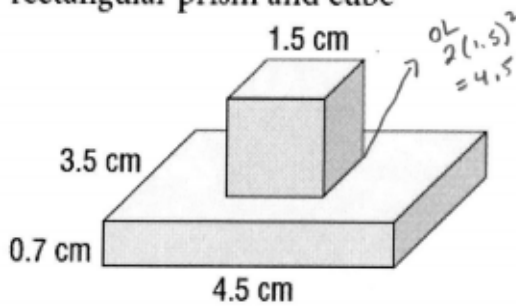
$$\begin{array}{r}
 5 \text{ cubes} \times 6 = 30 \text{ faces} \\
 - 8 \text{ faces} \\
 \hline
 22 \text{ faces} \\
 \times 1 \text{ cm}^2 \\
 \hline
 22 \text{ cm}^2
 \end{array}$$



$$\begin{array}{r}
 6 \text{ cubes} \times 6 = 36 \text{ faces} \\
 - 10 \text{ faces} \\
 \hline
 26 \text{ faces} \\
 \times 1 \text{ cm}^2 \\
 \hline
 26 \text{ cm}^2
 \end{array}$$

16. Determine the surface area of each composite object. What effect does the overlap have on the surface area?

a) rectangular prism and cube



Bottom (4.5, 3.5, 0.7)

$$3.5 \times \frac{2}{4.5}$$

$$A = b \times h$$

$$A = 3.5 \times 4.5$$

$$A = 15.75$$

$$2A = 31.5$$

$$0.7 \times \frac{2}{4.5}$$

$$A = b \times h$$

$$A = 0.7 \times 4.5$$

$$A = 3.15$$

$$2A = 6.3$$

$$\frac{2}{3.5} \times 0.7$$

$$A = b \times h$$

$$A = 3.5 \times 0.7$$

$$A = 2.45$$

$$2A = 4.9$$

$$SA = 31.5 + 6.3 + 4.9$$

$$= 42.7 \text{ cm}^2$$

Top (cube)

$$A = 6 \times b^2$$

$$A = 6 \times (1.5)^2$$

$$A = 6 \times 2.25$$

$$A = 13.5$$

$$TSA = \text{Top} + \text{bottom} - \text{overlap}$$

$$= 13.5 + 42.7 - 2(1.5)^2$$

$$= 13.5 + 42.7 - 4.5$$

$$= 51.7 \text{ cm}^2$$

$$SA_1 = 127.68 + 176.4 + 159.6$$

$$= 463.68 \text{ m}^2$$

Big (8.4, 7.6, 10.5)

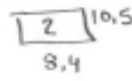


$$A = b \times h$$

$$A = 8.4 \times 7.6$$

$$A = 63.84$$

$$2A = 127.68 \text{ m}^2$$

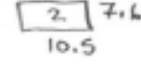


$$A = b \times h$$

$$A = 8.4 \times 10.5$$

$$A = 88.2$$

$$2A = 176.4 \text{ m}^2$$



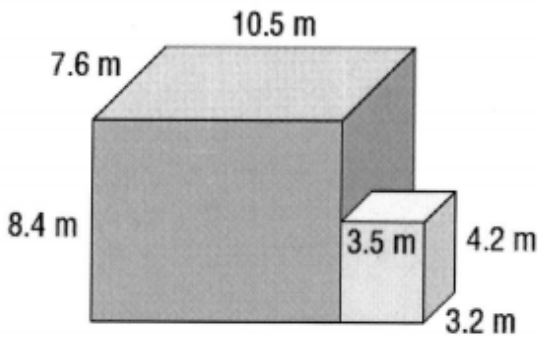
$$A = b \times h$$

$$A = 10.5 \times 7.6$$

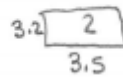
$$A = 79.8$$

$$2A = 159.6 \text{ m}^2$$

b) two rectangular prisms



Small (3.5, 3.2, 4.2)

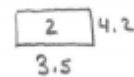


$$A = b \times h$$

$$A = 3.5 \times 3.2$$

$$A = 11.2$$

$$2A = 22.4 \text{ m}^2$$

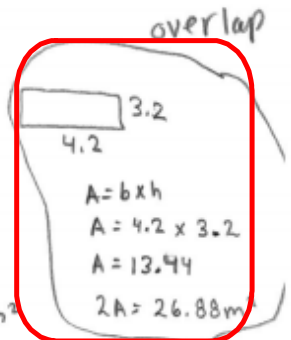


$$A = b \times h$$

$$A = 3.5 \times 4.2$$

$$A = 14.7$$

$$2A = 29.4 \text{ m}^2$$



$$A = b \times h$$

$$A = 4.2 \times 3.2$$

$$A = 13.44$$

$$2A = 26.88 \text{ m}^2$$

$$SA_2 = 22.4 + 29.4 + 26.88$$

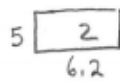
$$SA_2 = 78.68 \text{ m}^2$$

$$TSA = SA_1 + SA_2 - \text{Overlap}$$

$$= 463.68 + 78.68 - 26.88$$

$$= 515.48 \text{ m}^2$$

Rectangular Big (6,2, 5, 3.6)

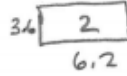


$$A = b \times h$$

$$A = 5 \times 6.2$$

$$A = 31$$

$$2A = 62$$

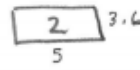


$$A = b \times h$$

$$A = 3.6 \times 6.2$$

$$A = 22.32$$

$$2A = 44.64$$



$$A = b \times h$$

$$A = 5 \times 3.6$$

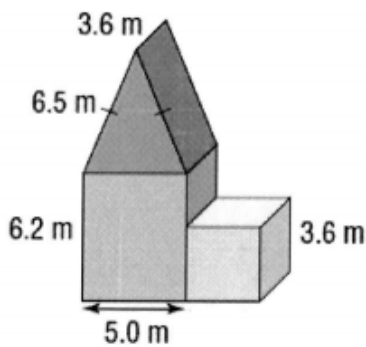
$$A = 18$$

$$2A = 36$$

$$SA_1 = 62 + 44.64 + 36$$

$$SA_1 = 142.64 \text{ m}^2$$

c) triangular prism, rectangular prism, and cube



1.4

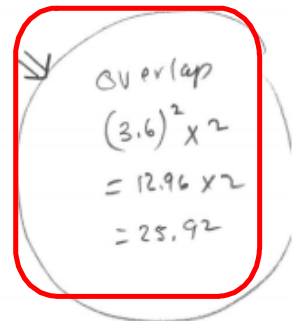
Cube (3.6, 3.6, 3.6)

$$s A = 6 \times b^2$$

$$s A = 6 \times (3.6)^2$$

$$SA = 6 \times 12.96$$

$$SA_2 = 77.76 \text{ m}^2$$



Overlap
 $(3.6)^2 \times 2$
 $= 12.96 \times 2$
 $= 25.92$

Overlap
 $2(18) = 36$

$$a^2 = c^2 - b^2$$

$$a^2 = (6.5)^2 - (2.5)^2$$

$$a^2 = 42.25 - 6.25$$

$$\sqrt{a^2} = \sqrt{36}$$

$$a = 6$$



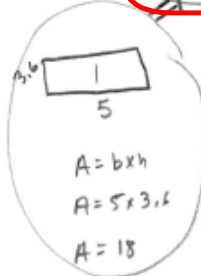
$$A = \frac{b \times h}{2}$$

$$A = \frac{5 \times 6}{2}$$

$$A = \frac{30}{2}$$

$$A = 15$$

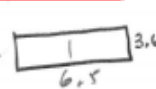
$$2A = 30$$



$$A = b \times h$$

$$A = 5 \times 3.6$$

$$A = 18$$



$$A = b \times h$$

$$A = 3.6 \times 6.5$$

$$A = 23.4$$



$$A = b \times h$$

$$A = 6.5 \times 3.6$$

$$A = 23.4$$

$$SA_3 = 30 + 18 + 23.4 + 23.4$$

$$= 94.8 \text{ m}^2$$

$$TSA = SA_1 + SA_2 + SA_3 - \text{overlap} - \text{overlap}$$

$$= 142.64 + 77.76 + 94.8 - 36 - 25.92$$

$$= 253.28 \text{ m}^2$$

Cylinder ($r = 9.6$ $h = 3.5$)

$$SA_1 = 2\pi r^2 + 2\pi r h$$

$$= 2(3.14)(9.6)^2 + 2(3.14)(9.6)(3.5)$$

$$= 2(3.14)(92.16) +$$

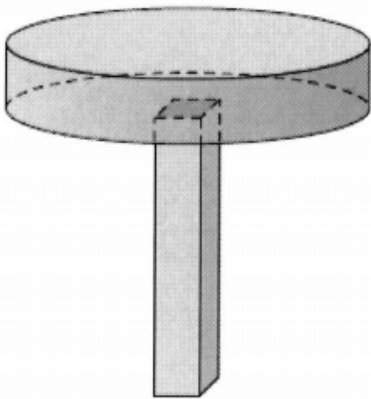
$$= 578.7648 + 211.008$$

$$SA_1 = 789.77 \text{ cm}^2$$

a) The rectangular prism has dimensions

2.5 cm by 2.5 cm by 15.0 cm.

The cylinder is 3.5 cm high
with radius 9.6 cm.



Rect prism (2.5, 2.5, 15.)

$$\begin{array}{|c|} \hline 2.5 \\ \hline 2.5 \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline 2 \\ \hline 2.5 \\ \hline \end{array} 15$$

$$\begin{array}{|c|} \hline 2 \\ \hline 2.5 \\ \hline \end{array} 15$$

$$A = b \times h$$

$$A = (2.5)(2.5)$$

$$A = 6.25$$

$$2A = 12.5$$

$$A = b \times h$$

$$A = 2.5 \times 15$$

$$A = 37.5$$

$$2A = 75$$

$$A = b \times h$$

$$A = 2.5 \times 15$$

$$A = 37.5$$

$$2A = 75$$

$$SA_2 = 12.5 + 75 + 75$$

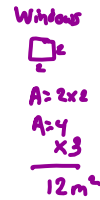
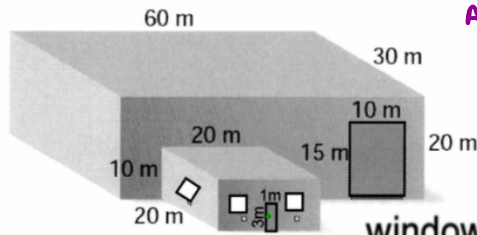
$$SA_2 = 162.5 \text{ cm}^2$$

$$TSA = SA_1 + SA_2 - \text{overlap}$$

$$= 789.77 + 162.5 - 12.5$$

$$= 939.77 \text{ cm}^2$$

A warehouse measures 60 m by 30 m by 20 m.
 An office attached to one wall of the warehouse measures 20 m by 20 m by 10 m.
 a) Determine the surface area of the building.



windows are all 2m by 2m

Large (60, 30, 20)



$$A = b \times h$$

$$A = 60 \times 30$$

$$A = 1800 m^2$$



$$A = b \times h$$

$$A = 60 \times 20$$

$$A = 1200 m^2$$

$$\times 2$$

$$A = 2400 m^2$$



$$A = b \times h$$

$$A = 30 \times 20$$

$$A = 600 m^2$$

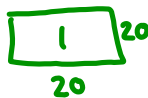
$$\times 2$$

$$A = 1200 m^2$$

$$SA = 1800 + 2400 + 1200$$

$$= 5400 m^2$$

Small (20, 20, 10)



$$A = b \times h$$

$$A = 20 \times 20$$

$$A = 400 m^2$$



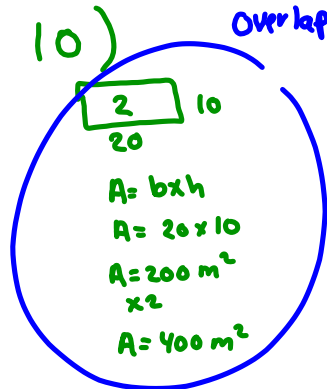
$$A = b \times h$$

$$A = 20 \times 10$$

$$A = 200 m^2$$

$$\times 2$$

$$A = 400 m^2$$



$$SA = 400 + 400 + 400$$

$$= 1200 m^2$$

$$TSA = \text{Big} + \text{Small} - \text{overlap} - \text{door} - \text{door} - \text{windows}$$

$$= 5400 + 1200 - 400 - 3 - 150 - 12$$

$$= 6035 m^2$$

