Curriculum Outcome

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

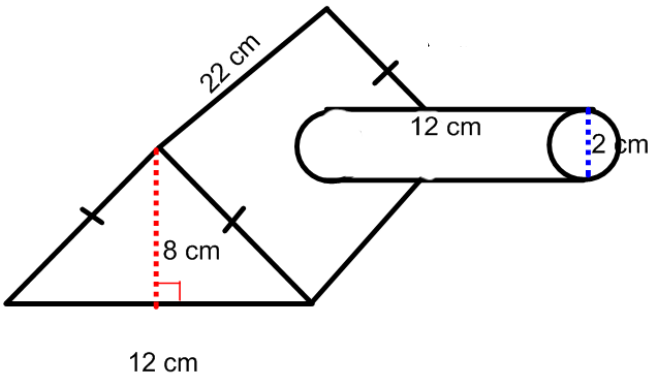
(N6) Determine an approximate square root of positive rational numbers that are non-perfect squares.

(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.**

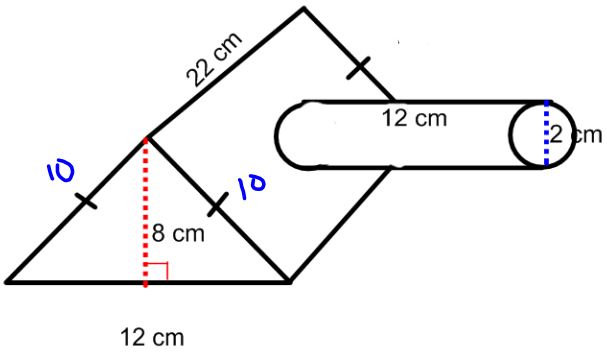
Warm Up

Find the total surface area



Find the total surface area

Warm Up



8, 6, x

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

$c^2 = 8^2 + 6^2$

$c^2 = 64 + 36$

$\sqrt{c^2} = \sqrt{100}$

$c = 10$

cylinder $r = 1$ $h = 12$

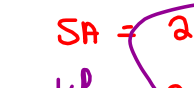
$SA = 2\pi r^2 + 2\pi rh$

overlap $= 2(3.14)(1)^2 + 2(3.14)(1)(12)$

$= 6.28 + 75.36$

$= 81.64 \text{ cm}^2$

Prism



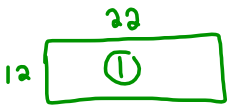
$A = \frac{b \times h}{2}$

$A = \frac{12 \times 8}{2}$

$A = 48$

$2A_\Delta = 96 \text{ cm}^2$

+

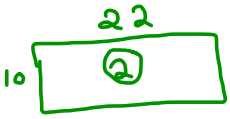


$A = b \times h$

$A = 12 \times 22$

$A = 264 \text{ cm}^2$

+



$A = b \times h$

$A = 10 \times 22$

$A = 220$

$2A = 440$

$SA = 800 \text{ cm}^2$

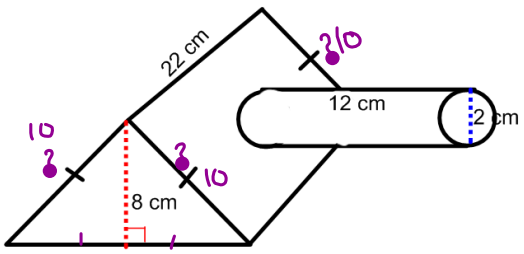
$T_{SA} =$ Prism + cylinder − overlap

$= 800 + 81.64 - 6.28$

$= 875.36 \text{ cm}^2$

Warm Up

Find the total surface area



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

$c^2 = 8^2 + 6^2$

$c^2 = 64 + 36$

$\sqrt{c^2} = \sqrt{100}$

$c = 10$

Prism

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

$A = \frac{12 \times 8}{2}$

$A = 48$

$2A_b = 96\ cm^2$

+

22 × 12 ①

$A = b \times h$

$A = 12 \times 22$

$A = 264\ cm^2$

+

22 × 10 ②

$A = b \times h$

$A = 10 \times 22$

$A = 220$

$2A = 440$

$SA = 800\ cm^2$

cylinder

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

$= 2(3.14)(1)^2 + 2(3.14)(1)(12)$

$= 6.28 + 75.36$

$= 81.64\ cm^2$

overlap

② $A = \pi r^2$

$2A = 2(\pi r^2)$

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

$= 6.28\ cm^2$

$TSA =$ Prism + cylinder − overlap

$= 800 + 81.64 - 6.28$

$= 875.36\ cm^2$

Test
Wednesday, Nov 28

Multiple choice and Square roots and perfect squares questions tomorrow

Surface area of composite objects questions on Wednesday

Test

Square roots and perfect squares

Area of a square = $(\text{side})^2$ Side of square = $\sqrt{\text{area of square}}$

- square root is 2.4 means find the perfect square # so multiply by itself

- is it a perfect square
take the square root and if the decimal stops or repeats then the number was perfect

- square root of fraction take square root of top and bottom
or check top and bottom of a fraction

- bench marks find the perfect square that the number falls between

Perfect Squares: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225

section 1.1 to 1.2

Surface area of composite objects

section 1.3 & 1.4

Perfect Squares

$(1)^2 = 1 \times 1 = \mathbf{1}$

$(2)^2 = 2 \times 2 = \mathbf{4}$

$(3)^2 = 3 \times 3 = \mathbf{9}$

$(4)^2 = 4 \times 4 = \mathbf{16}$

$(5)^2 = 5 \times 5 = \mathbf{25}$

$(6)^2 = 6 \times 6 = \mathbf{36}$

$(7)^2 = 7 \times 7 = \mathbf{49}$

$(8)^2 = 8 \times 8 = \mathbf{64}$

$(9)^2 = 9 \times 9 = \mathbf{81}$

$(10)^2 = 10 \times 10 = \mathbf{100}$

$(11)^2 = 11 \times 11 = \mathbf{121}$

$(12)^2 = 12 \times 12 = \mathbf{144}$

$(13)^2 = 13 \times 13 = \mathbf{169}$

$(14)^2 = 14 \times 14 = \mathbf{196}$

$(15)^2 = 15 \times 15 = \mathbf{225}$

$(16)^2 = 16 \times 16 = \mathbf{256}$

$(17)^2 = 17 \times 17 = \mathbf{289}$

$(18)^2 = 18 \times 18 = \mathbf{324}$

$(19)^2 = 19 \times 19 = \mathbf{361}$

$(20)^2 = 20 \times 20 = \mathbf{400}$

$(21)^2 = 21 \times 21 = \mathbf{441}$

$(22)^2 = 22 \times 22 = \mathbf{484}$

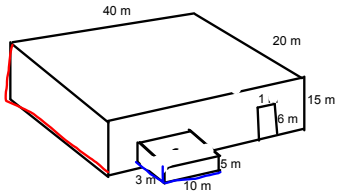
$(23)^2 = 23 \times 23 = \mathbf{529}$

$(24)^2 = 24 \times 24 = \mathbf{576}$

$(25)^2 = 25 \times 25 = \mathbf{625}$

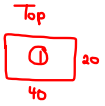
Find the area of the warehouse with the attached storage space.

(Think if you were going to paint this....How much paint is needed???)



Step 1) Calculate the sides of all of the larger prism, (40m x 20m x 15m)

Top



$A_1 = b \times h$

$A_1 = 40 \times 20$

$A_1 = 800\ m^2$

left / Right

$A_2 = b \times h$

$A_2 = 20 \times 15$

$A_2 = 300\ m^2$

$2A_2 = 600\ m^2$

Front / back

$A_3 = b \times h$

$A_3 = 40 \times 15$

$A_3 = 600\ m^2$

$2A_3 = 1200\ m^2$

So surface area of the storage space is:

$$SA_1 = A_1 + 2A_2 + 2A_3$$
$$= 800 + 600 + 1200$$
$$= 2600\ m^2$$

Step 2) Storage space consist of 3 walls and a roof (3m x 10m x 5m)

Top

$A_1 = B \times h$

$A_1 = 10 \times 3$

$A = 30\ m^2$

left/Right

$A_2 = b \times h$

$A_2 = 3 \times 5$

$A_2 = 15\ m^2$

$2A_2 = 30\ m^2$

Front/back

$A_3 = b \times h$

$A = 10 \times 5$

$A = 50\ m^2$

$2A_3 = 100\ m^2$

So surface area of the storage space is:

$$SA = A_1 + 2A_2 + 2A_3$$
$$= 30 + 30 + 100$$
$$= 160\ m^2$$

Overlap

$A = 50\ m^2$

$2A = 100\ m^2$

door

$A = 1m \times 6m$

$A = 6m^2$

$$TSA = SA_1 + SA_2 - \text{overlap} - \text{door}$$
$$= 2600 + 160 - 100 - 6$$
$$= 2654\ m^2$$

Class / Homework

Review For Test

- Handout: Surface Area Worksheet

Questions: 1-6

answers were on the board

- Questions from Textbook:

page 45 - 46

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

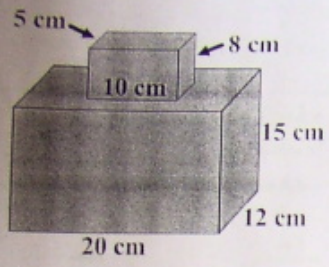
Page 31

10a Warehouse question

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.

1.



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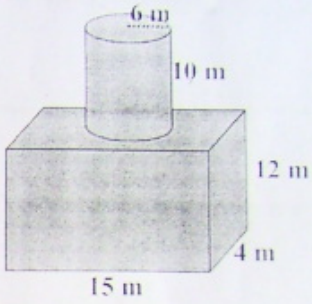

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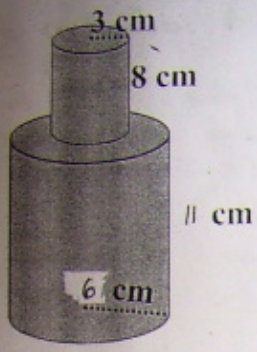

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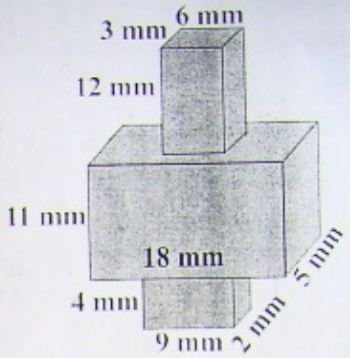
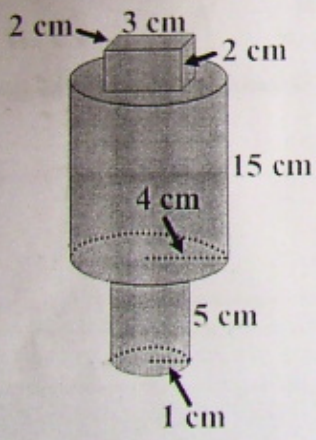
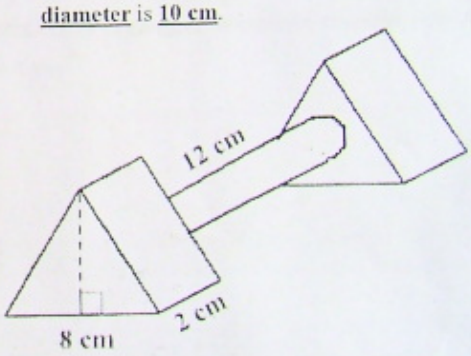


5.



6. The cylinder below is connected to two **IDENTICAL EQUILATERAL TRIANGULAR prisms.** The cylinder's **diameter** is **10 cm**.



Surface Area

Test Review Worksheet

1) $1680\ cm^2$

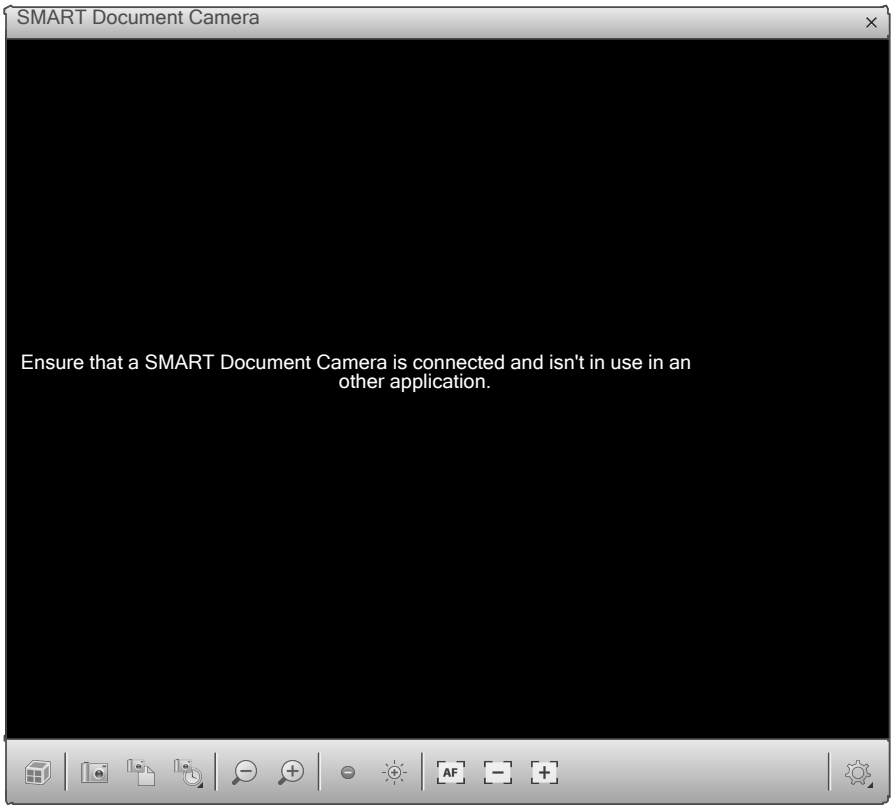
2) $953m^2$

3) $791.7\ cm^2$

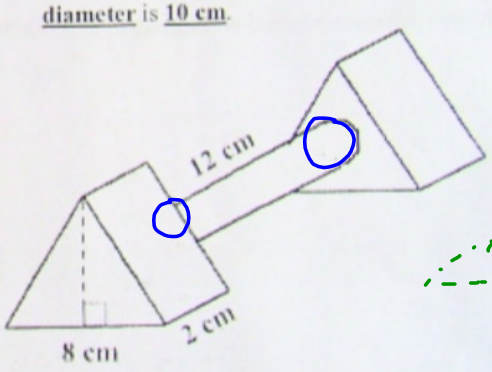
4) $990\ mm^2$

5) $528.9\ cm^2$

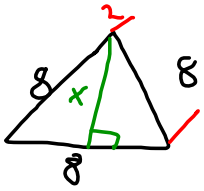
6) $426.8\ cm^2$

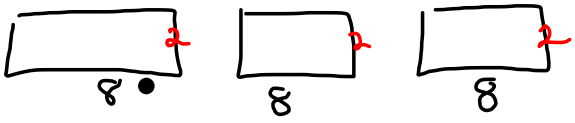

SMART Document Camera
Ensure that a SMART Document Camera is connected and isn't in use in an other application.
AF

6. The cylinder below is connected to two **IDENTICAL EQUILATERAL TRIANGULAR prisms.** The cylinder's **diameter** is **10 cm**.



$x^2 = 8^2 - 4^2$
$= 64 - 16$
$\sqrt{x^2} = \sqrt{48}$
$x = 6.9$





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

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

$A = 27.6$

$2A = 55.2$

$A = 8 \times 2$
$A = 16$

16 16

$SA_1 = 55.2 + 16 + 16 + 16$
$= 103.2 \text{ cm}^2$

$SA_2 = 103.2 \text{ cm}^2$

Cylinder: $r = 5$ $h = 12$

$SA_3 = 2\pi r^2 + 2\pi rh$

over lap ×2 $= 2\pi(5)^2 + 2\pi(5)(12)$

$= 157 + 376.8$

$= 533.8 \text{ cm}^2$

$TSA = SA_1 + SA_2 + SA_3 - OV - OV$

$= 103.2 + 103.2 + 533.8 - 157$
-157

$= 426.2$