

P. 406 #5a)

7.1 Area of Composite Figures and Regular Polygons

Sample student solutions

$$\begin{aligned} A &= \frac{P_a}{2} \\ &= \frac{34(8)(41)}{2} \\ &= \frac{272(41)}{2} \\ &= \frac{11152}{2} \\ A &= \underline{\underline{5576 \text{ mm}^2}} \end{aligned}$$

p.406 (7.1)
#66

SQ = Square
TR = Triangle

$$A_{SQ} = s^2$$

$$A_{SQ} = 5.6\text{cm} \times 5.6\text{cm} \\ = 31.36\text{cm}^2$$

$$A_{TR} = \frac{1}{2} b h$$

$$A_{TR} = \frac{5.6\text{cm}}{2} \times 3.8\text{cm} \\ = 2.8\text{cm} \times 3.8\text{cm} \\ = 10.64\text{cm}^2$$

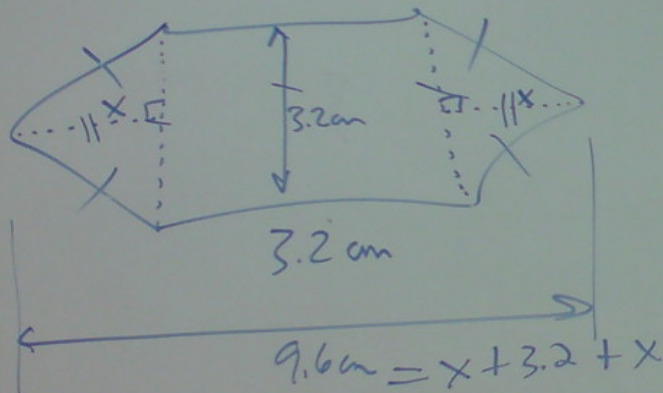
$$TA = 31.36\text{cm}^2 + 10.64\text{cm}^2 \\ = 33.04\text{cm}^2$$

Tuesday June 4th, 2008 Day 3



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6C) area of square = $3.2\text{cm} \times 3.2\text{cm} = 10.24\text{cm}^2 = A_{\text{square}}$



Congruent Δ s (SSS) ✓

$$9.6 - 3.2 = 2x$$

$$x = \frac{6.4}{2}$$

$$\text{height} = x = 3.2\text{cm}$$

Area of both triangles

$$= \frac{2(3.2)(3.2)}{2}$$

$$A_{2\Delta} = 10.24\text{cm}^2$$

$$TA = 10.24 + 10.24$$

$$TA = \underline{\underline{20.48\text{cm}^2}}$$

(7.1)

(#7c)

$$P = 1 + 4.1 + 1$$

$$+ 3.5 + 3.5$$

$$+ 1 + 4.1 + 1$$

$$P = 4 + 8.2 + 7$$

$$P = 11 + 8.2$$

$$P = 19.2 \text{ m}$$

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#7c) continued

$$l = 4.1m$$

$$A_2 = lw$$

$$w = 4.1 - 1 - 1$$

$$A_2 = (4.1)(2.1)$$

$$w = 2.1m$$

$$A_2 = 8.61m^2$$

$$A_1 = \frac{bh}{2}$$

$$b = 2.1m$$

$$h = 1m$$

$$A_1 = \frac{(2.1)(1)}{2}$$

$$A_1 = 1.05m^2$$

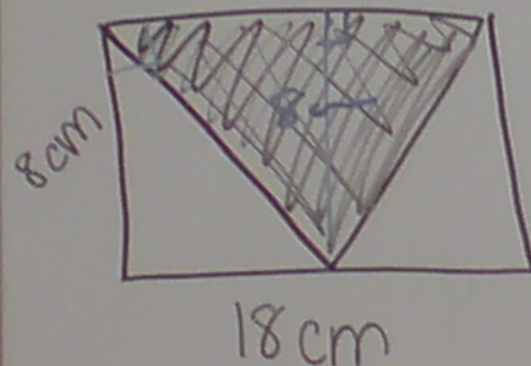
$$A_T = 4.305 + (8.61 - 1.05)$$

$$A_T = 11.865m^2$$



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8 a) i. $A = \frac{bh}{2}$



$$= \frac{18\text{cm} \times 8\text{cm}}{2}$$

$$= \frac{144\text{cm}}{2}$$

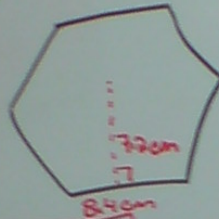
$$= 72\text{cm}$$

$$\begin{aligned}
 8.a) ii. \quad A_1 &= l \times w & A_2 &= l \times w \\
 A_1 &= 5.8 \times 5.8 & A_2 &= 4.6 \times 4.6 \\
 A_1 &= 33.64 \text{ cm}^2 & A_2 &= 21.16 \text{ cm}^2 \\
 A_S &= A_1 - A_2 \\
 A_S &= 33.64 - 21.16 \\
 A_S &= 12.48 \text{ cm}^2
 \end{aligned}$$

$$A_2 - A_S = A_{SH}$$

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9. a)



$$P = 8.4 \times 6 \\ = 50.4 \text{ cm}$$

$$A = 181.44 \text{ cm}^2$$

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

$$A = \frac{50.4 \times 7.2}{2}$$

$$A = \frac{362.88}{2}$$



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#10

$$\begin{aligned} a) C &= \pi d + (2(\text{lengths of rectangle})) \\ &= 3.14(22.8) + (2(49.2)) \\ &= 71.6 + 98.4 \end{aligned}$$

$$\text{Length of one lap} = 170 \text{ m.}$$

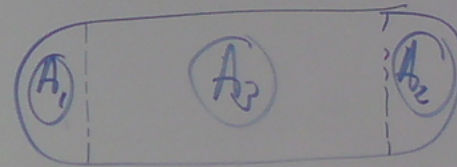
$$\begin{aligned} b) 625 \text{ m} \div 170 \text{ m} &= \# \text{ of laps} \\ &= 3.6 \text{ laps} \end{aligned}$$

$$\begin{aligned} c) A &= \pi r^2 + (\text{area of rectangle}) \\ &= 3.14(22.8 \div 2)^2 + (49.2)(22.8) \\ &= 3.14(11.4)^2 + 1121.76 \\ &= (3.14)129.96 + 1121.76 \end{aligned}$$

$$\begin{aligned} \text{Area of field} &= 408.0794 + 1121.76 \\ &= 1529.8394 \text{ m}^2 \end{aligned}$$

$$A_{\text{circle}} = A_1 + A_2$$

$$A_3 = lw$$



$$A_{\text{field}} = A_1 + A_2 + A_3$$

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11c.)

$$\pi = 3.14 \dots$$

$$\begin{aligned} A &= \pi r^2 \\ &= 3.14 (2.4)^2 \\ &= 3.14 \times 5.76 \\ &= 18.0864 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} A &= \frac{b \times h}{2} \\ &= \frac{4.8 \times 2.4}{2} \\ &= \frac{11.52}{2} \\ &= 5.76 \text{ m}^2 \end{aligned}$$

Area of both

$$\begin{aligned} &= 5.76 \times 2 \\ &= 11.52 \text{ m}^2 \end{aligned}$$

$$A_C - A_{2D} = 18.0864 - 11.52$$

$$A_{\text{SHADED}} = 6.5664 \text{ m}^2$$

