| Student: _____ | **Instructor:** Joe Betters | |
| Date: _____ | **Course:** Pre-Calculus Pre AP (Master Course) | **Assignment:** 8.4 Classwork Day 2 |

1. Find the area K of the triangle.
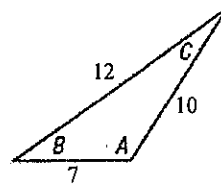
K = _____ square units
(Round to two decimal places as needed.)

ID: 8.4.11

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2. Find the area K of the triangle.

$a = 10, c = 9, B = 130°$

K = _____ square units
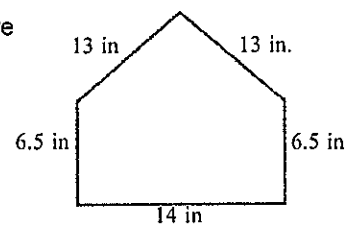(Round to two decimal places as needed.)

ID: 8.4.17

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3. Use the formula given below to find the area K of the triangle specified by $B = 10°$, $C = 40°$, and $b = 2$.

$$K = \frac{b^2 \sin A \sin C}{2 \sin B}$$

K = _____ square units
(Round to two decimal places as needed.)

ID: 8.4.29

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4. The dimensions of home plate at a random baseball field in the United States are shown. Find the area of home plate.
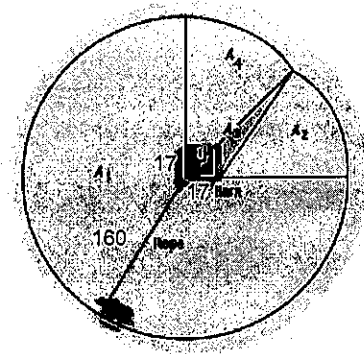

The area of home plate is approximately _____ square inches.
(Round to two decimal places as needed.)

ID: 8.4.37

5. A cow is tethered to one corner of a square barn, 17 feet by 17 feet, with a rope 160 feet long. (See the illustration to the right.)

   What is the maximum grazing area for the cow?

The maximum grazing area is approximately _____ square feet.
(Do not round until the final answer. Then round to one decimal place as needed.)
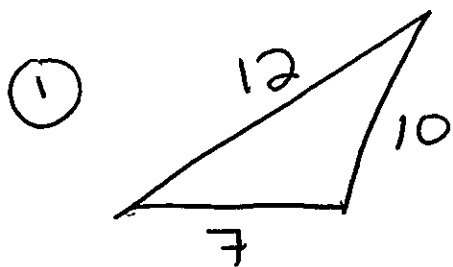
ID: 8.4.45

1. 34.98

_____

2. 34.47

_____

3. 5.67

_____
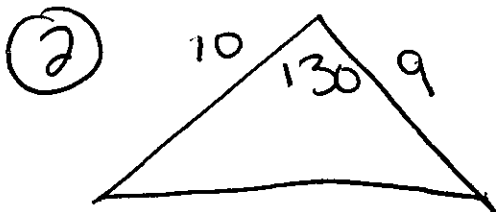
4. 167.68

_____

5. 79,668.6

_____

8.4 cw day 2

①

12

10

7

$$S = \frac{1}{2}(12 + 10 + 7) = 14.5$$

$$K = \sqrt{14.5(14.5-12)(14.5-10)(14.5-7)}$$

$$\boxed{K = 34.98}$$

②

10   130   9

$$K = \frac{1}{2}(10)(9)\sin 130$$

$$\boxed{K = 34.47}$$

③

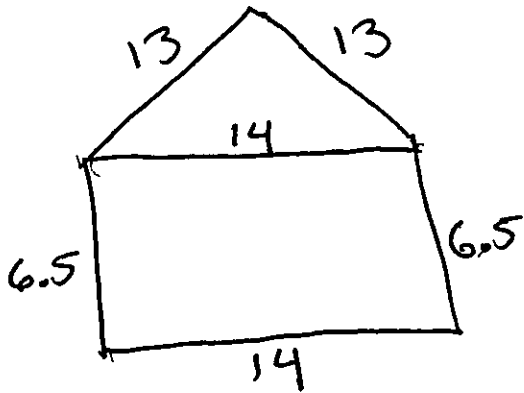$$K = \frac{b^2 \sin A \sin C}{2 \sin B}$$

$B = 10°$

$C = 40°$

$A = 180 - 40 - 10 = 130$

$b = 2$

$$K = \frac{2^2 \sin 130 \sin 40}{2 \sin 10} = \boxed{5.67}$$

④

$\triangle = \qquad S = \frac{1}{2}(13+13+14) = 20$
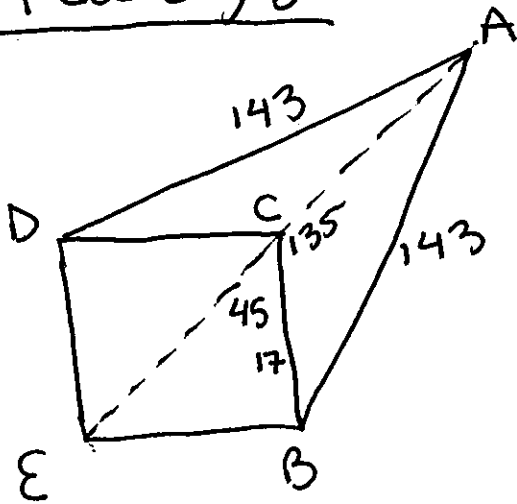
$$K = \sqrt{20(20-13)(20-13)(20-14)}$$

$K = 76.68$

$\square = 14(6.5) = 91$

$91 + 76.68 = \boxed{167.68}$

8.4 cw day 2

⑤

A

143

D

C
135

143

45

17

E

B

$$\frac{\sin 135}{143} = \frac{\sin CAB}{17}$$

∠CAB = 4.82°

∠ABC = 180 - 135 - 4.82

∠ABC = 40.18

Area △ABC = $\frac{1}{2}$ (17)(143)(sin 40.18)

Identical ⎡ Area △ABC = 784.23
         ⎣ Area △ACD = 784.23

Area Sector 1 = $\frac{1}{2} r^2 \theta$

= $\frac{1}{2} (143)^2 (90 - 40.18)\left(\frac{\pi}{180}\right)$

= 8890.44

Identical

Area Sector 2 = 8890.44

Area ($\frac{3}{4}$ circle) = $\frac{3}{4}(\pi r^2)$ =

$\frac{3}{4}(\pi)(160^2)$ = 60318.58

79667.9