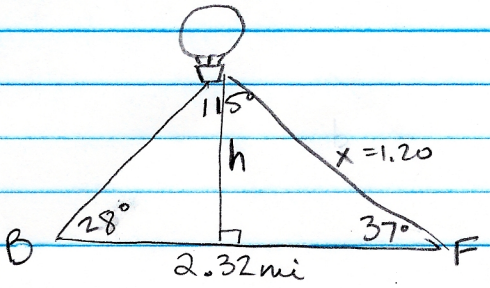
Jackson

Tues, 11/20 - Mixed Review

LofS 1.)



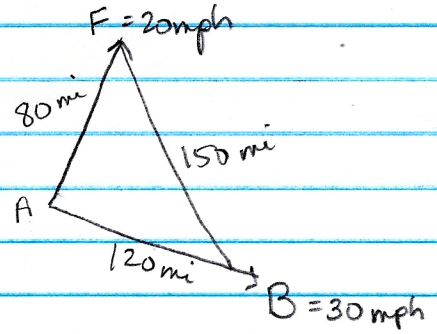
$$\frac{\sin 115}{2.32} = \frac{\sin 28}{x}$$

$x = 1.20$ mi

$$\sin 37 = \frac{h}{1.20}$$

$h = .72$ miles

LofC 2.)

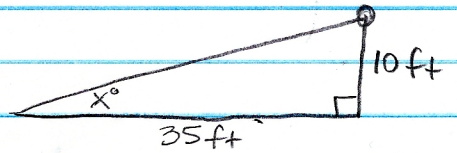


Frodo = 80 mi
Bilbo = 120 mi

$$\cos A = \frac{80^2 + 120^2 - 150^2}{2(80)(120)}$$

$\angle A =$ 95.08° apart

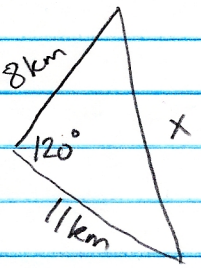
SCT 3.)



$$\tan x = \frac{10}{35}$$

15.95°

LofC 4.)

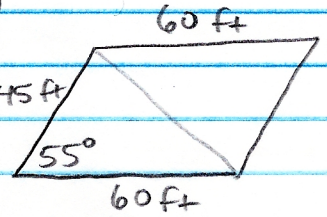


$x^2 = 8^2 + 11^2 - 2(8)(11)\cos 120$

$x^2 = 273$

$x =$ 16.52 km

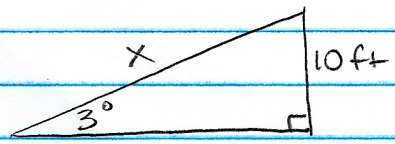
Area 5.)



2 Δ's

$2\left(\frac{1}{2} \cdot 45 \cdot 60 \cdot \sin 55\right) =$ 2211.71 ft²

SCT 6.)



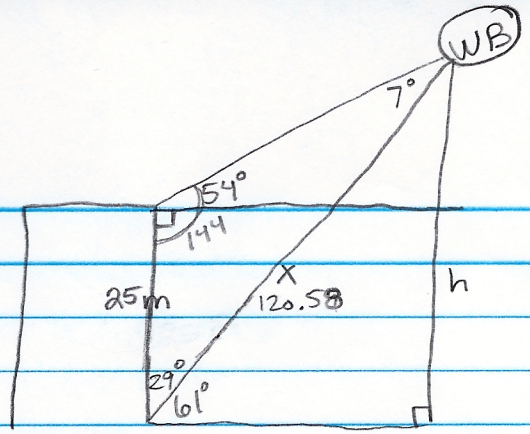
$$\sin 3 = \frac{10}{x}$$

$$x = \frac{10}{\sin 3}$$

191.07 ft

LofS

7.)



$$\frac{\sin 144}{x} = \frac{\sin 7}{25}$$

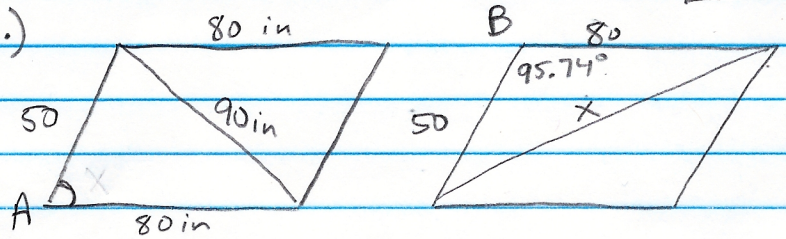
$$x = 120.58$$

$$\sin 61 = \frac{h}{120.58}$$

$$h = \boxed{105.46 \text{ m}}$$

LofC

8.)



$$\cos A = \frac{50^2 + 80^2 - 90^2}{2(50)(80)}$$

$$A = 84.26° \quad \angle B = 95.74°$$

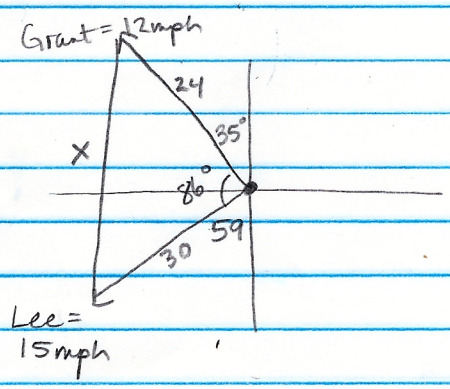
$$x^2 = 50^2 + 80^2 - 2(50)(80)\cos 95.74$$

$$x^2 = 98.49$$

$$x = \boxed{98.49 \text{ in}}$$

LofC

9.)



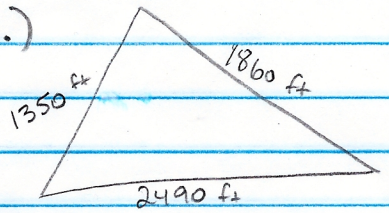
$$x^2 = 24^2 + 30^2 - 2(24)(30)\cos 86°$$

$$x^2 = 1375.55$$

$$x = \boxed{37.09 \text{ miles apart}}$$

Area Heron

10.)



$\$2200$/acre

$$s = \frac{1350 + 1860 + 2490}{2} = 2850$$

$$\text{Area} = \sqrt{2850(2850-1350)(2850-1860)(2850-2490)}$$

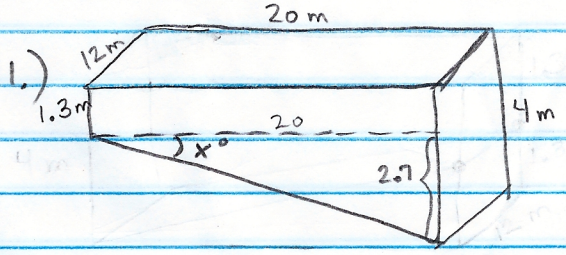
$$= 1234345.981 \text{ ft}^2$$

$$\frac{1234345.981}{43{,}560 \text{ ft}^2} = 28.34 \text{ acres}$$

$$28.34 \text{ acres} \times \$2200 = \boxed{\$62{,}340.71}$$

SCT

11.)

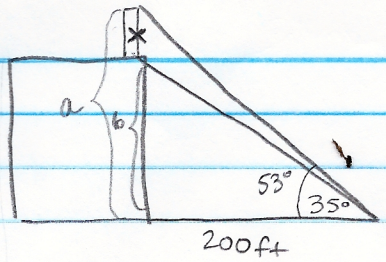


$$\tan x = \frac{2.7}{20}$$

$$x = \boxed{7.69°}$$

SCT

12.)



$\tan 35 = \frac{b}{200} = 140.04$

$\tan 53 = \frac{a}{200} = 265.41$

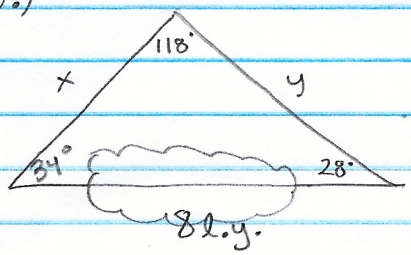
$x = a - b$

$= 265.41 - 140.04$

$x = \boxed{125.37 \text{ ft}}$

LofS

13.)



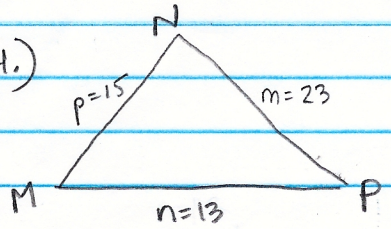
$\frac{\sin 118}{8} = \frac{\sin 28}{x} = \frac{\sin 34}{y}$

$x = 4.25 \quad y = 5.07$

$\boxed{9.32 \text{ light years}}$

Area Heron

14.)



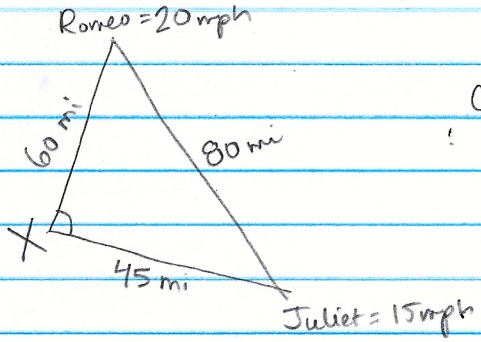
$s = \frac{15+23+13}{2} = 25.5$

$\text{Area} = \sqrt{25.5(25.5-15)(25.5-13)(25.5-23)}$

$= \boxed{91.47} \text{ units}^2$

LofC

15.)

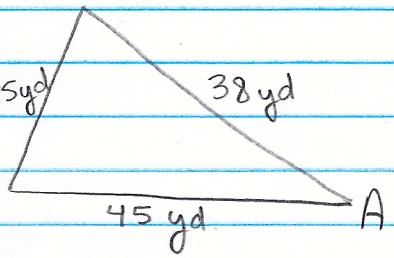


$\cos X = \frac{60^2 + 45^2 - 80^2}{2(60)(45)}$

$X = \boxed{98.25°}$

LofC

16.)

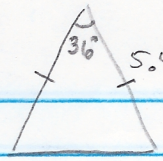


$\cos A = \frac{38^2 + 45^2 - 25^2}{2(38)(45)}$

$A = \boxed{33.74°}$

10 Δ's

Area 17.)



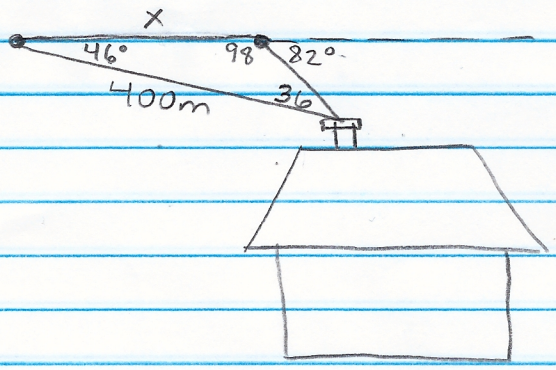
$10\left(\frac{1}{2}(5.4)(5.4)\sin 36\right)$

$10\ (8.57)$

$85.70\ mm^2$

18.)

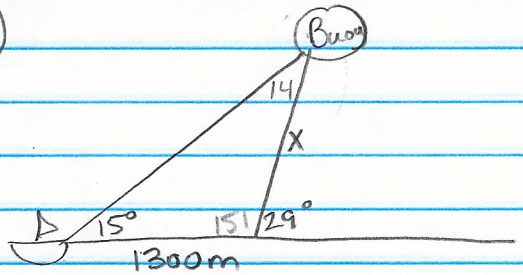
L of S



$\frac{\sin 36}{x} = \frac{\sin 98}{400}$

$x = 237.42\ m$

L of S 19.)



$\frac{\sin 15}{x} = \frac{\sin 14}{1300}$

$x = 1390.80\ m$