Algebra 2 | Tues. 1-29-13 | Class Notes

$y = f(\theta) = \sin\theta$ ⇒ "Parent Function"

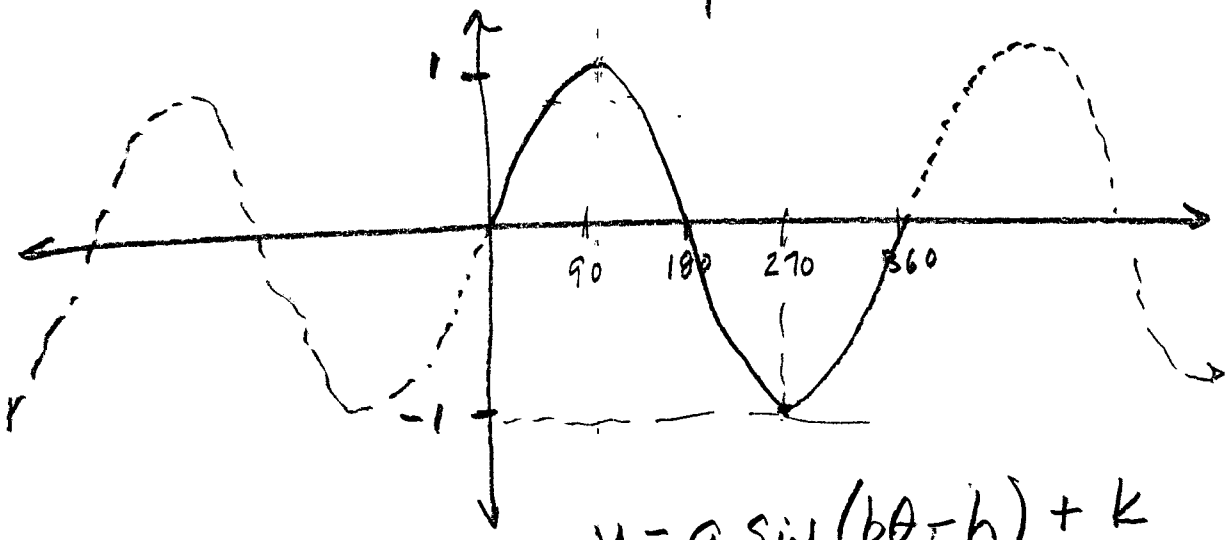
DV (−1 to +1) | IV (All Reals)

amplitude is |1|

PHASE SHIFT: horizontal shift = 0

vertical shift = 0

period = 360°

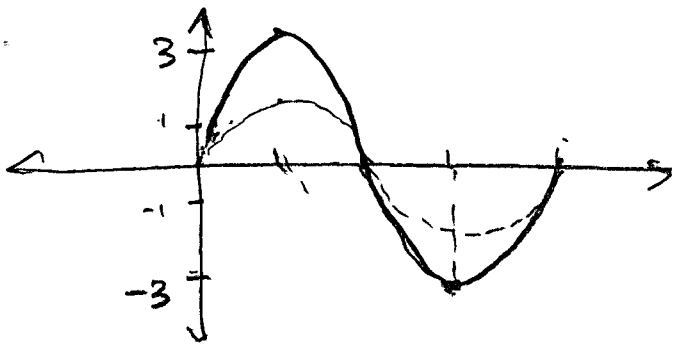



$y = a\sin(b\theta - h) + k$

$a$: 1 | $b$: $\frac{360}{111}$ | $h$: 0 | $k$: 0

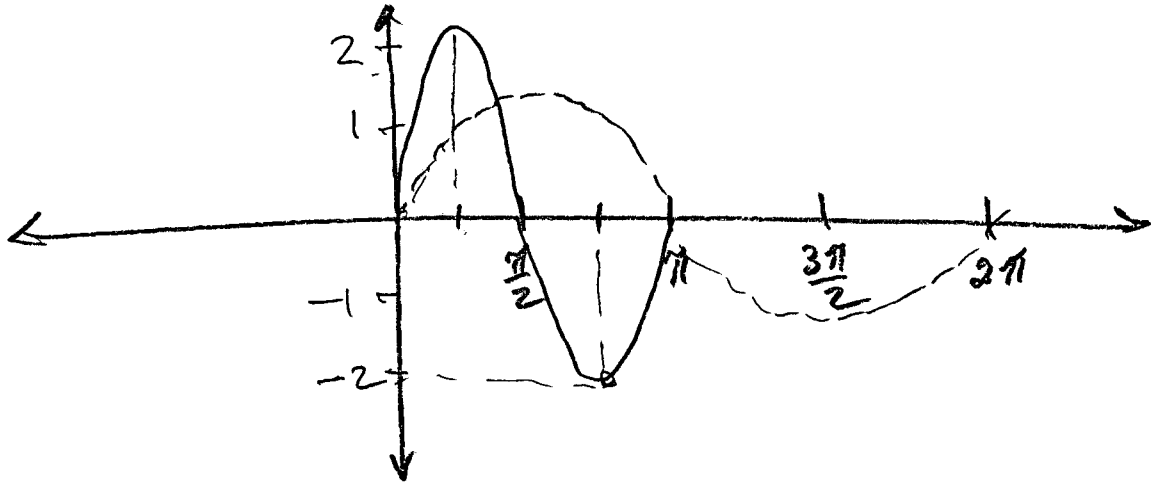
$$y = a\sin b(\theta - h) + k$$

$y = 3\sin\theta$




(Ex) $y = 2\sin(2\theta)$ radians. Amp $= |2|$

per $= \frac{2\pi}{|2|} = \pi$

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Amp and period

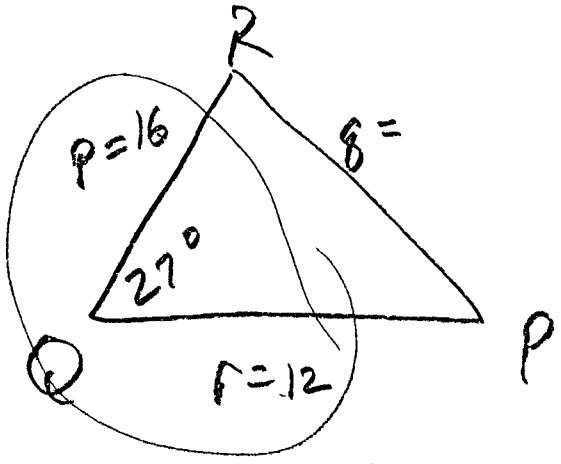
(35) $y = -1 + 9\sin(4\theta - 225)$

Amp $= |9|$

period $= \frac{360}{|4|} = 90^\circ$

Area = ?

(19) $\triangle QRP$ $r=12$, $p=16$, $m\angle Q = 27^\circ$




$$A = \frac{1}{2}(16)(12)\sin 27^\circ$$

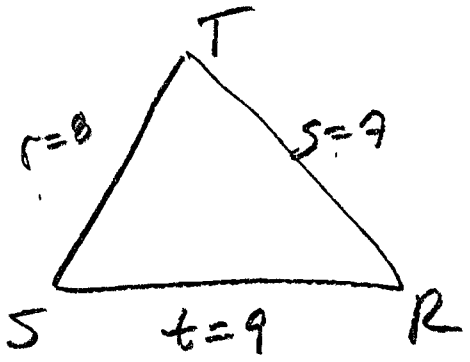
$$A = 96(.4540)$$

$$A = 43.584$$

$$A = 43.6 \text{ units}^2$$

Area

(29) $\triangle STR$, $r=8$, $t=9$, $s=7$




$S$ = semi-perimeter ($\frac{1}{2}$)

$$S = \frac{8+7+9}{2} = \frac{24}{2} = 12$$

$$A = \sqrt{12(12-8)(12-9)(12-7)}$$

$$A = \sqrt{12(4)(3)(5)}$$

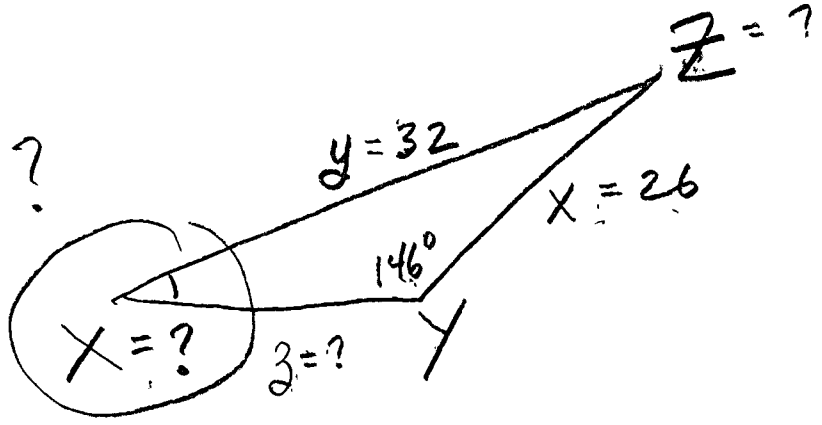
$$A = \sqrt{720}$$

$$A = 26.8328$$

$$A = 26.8 \text{ units}^2$$

(13) $\triangle YZX$, $m\angle Y = 146^\circ$, $X = 26$, $y = 32$

$m\angle X = ?$ $\quad$ ref $= 34^\circ$




$32^2 = 26^2 + z^2 - 2(26)z \quad (-\cos 34^\circ)$

$1024 = 676 + z^2 + 52z(.8290)$

$-1024 \quad -1024$

$0 = z^2 + 43.1099z - 348$

$a = 1$

$b = 43.1099$

$c = -348$

$b^2 - 4ac$

$(43.1099)^2 - 4(1)(-348)$

$1858.463 + 1392 = 3250.463 = d$

$$x = \frac{-43.1099 \pm 57.01}{2}$$

ONLY 1 positive solution

$$x = \frac{13.9001}{2} \doteq 6.950$$