1a) 1. $(1, 0.16)$ $\sin\theta = 0.16$
$\theta = 9.2°$
$= \frac{23\pi}{450}$

2. $(\cos\frac{23\pi}{450}, \sin\frac{23\pi}{450})$

3. $P(\frac{23\pi}{450})$ $x = \cos\frac{23\pi}{450}$
$= 1$

b) 1. $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$ $\cos\theta = -\frac{\sqrt{2}}{2}$
$= 225°$

2. $(\cos\frac{5\pi}{4}, \sin\frac{5\pi}{4})$ $= \frac{5\pi}{4}$

3. $P(\frac{5\pi}{4})$ $y = \sin\frac{5\pi}{4}$
$= -\frac{\sqrt{2}}{\sqrt{2}}$

c) 1. $(-\frac{1}{2}, \frac{\sqrt{3}}{2})$ $\sin\theta = \frac{\sqrt{3}}{2}$
$\theta = 120$

2. $(\cos\frac{2\pi}{3}, \sin\frac{2\pi}{3})$ $= \frac{2\pi}{3}$

3. $P(\frac{2\pi}{3})$ $x = \cos\frac{2\pi}{3}$
$= -\frac{1}{2}$

d) 1. $(0.9, -0.42)$ $\cos\theta = -0.42$
$\theta = 115$

2. $(\cos\frac{23\pi}{36}, \sin\frac{23\pi}{36})$ $= \frac{23\pi}{36}$

3. $P(\frac{23\pi}{36})$ $y = \sin\frac{23\pi}{36}$
$y = 0.9$

e) 1. $(-\frac{\sqrt{3}}{2}, -\frac{1}{2})$ $\cos\theta = -\frac{\sqrt{3}}{2}$
$\theta = 210°$

2. $(\cos\frac{7\pi}{6}, \sin\frac{7\pi}{6})$ $= \frac{7\pi}{6}$

3. $P(\frac{7\pi}{6})$ $y = \sin\frac{7\pi}{6}$
$= -\frac{1}{2}$

f) 1. $(0.9, -0.34)$ $\sin\theta = -0.34$

$\theta = 348$

2. $(\cos\frac{17\pi}{9}, \sin\frac{17\pi}{9})$ $= \frac{17\pi}{9}$

3. $P(\frac{17\pi}{9})$ $x = \cos\frac{17\pi}{9}$

$= 0.9$

2a) $P(\frac{2\pi}{3}) = (\cos\frac{2\pi}{3}, \sin\frac{2\pi}{3})$

$= (-\frac{1}{2}, \frac{\sqrt{3}}{2})$

b) $P(\frac{\pi}{6}) = (\cos\frac{\pi}{6}, \sin\frac{\pi}{6})$

$= (\frac{\sqrt{3}}{2}, \frac{1}{2})$

c) $P(\frac{7\pi}{4}) = (\cos\frac{7\pi}{4}, \sin\frac{7\pi}{4})$

$= (\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$

d) $P(\frac{\pi}{9}) = (\cos\frac{\pi}{4}, \sin\frac{\pi}{9})$

$\approx (0.94, 0.34)$

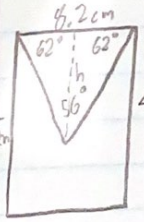
e) $P(\frac{11\pi}{10}) = (\cos\frac{11\pi}{10}, \sin\frac{11\pi}{10})$

$\approx (-0.95, -0.31)$

f) $P(\frac{14\pi}{15}) = (\cos\frac{14\pi}{15}, \sin\frac{14\pi}{15})$

$\approx (-0.98, 0.21)$

3)



$\tan 62 = \frac{h}{4.1}$

$4.1 \tan 62 = 7.7$

$12.5 - 7.7 = 4.8\text{cm}$

$\therefore$ the vertex of the cone is 4.8cm above the bottom of the glass.