Pick 4 questions from each practice

Practice 1:

Converting a polar coordinate representation to a rectangular coordinates:

(r,θ)	(x,y)
1. $\left(-3,\frac{\pi}{2}\right)$	$(0,-3)$
2. $\left(\sqrt{3},\frac{5\pi}{6}\right)$	$\left(-\frac{3}{2},\frac{\sqrt{3}}{2}\right)$
3. $\left(4,\frac{5\pi}{12}\right)$	$\left(\sqrt{2}-\sqrt{6},\sqrt{2}+\sqrt{6},\right)$
4. $\left(-4,\frac{13\pi}{12}\right)$	$\left(\sqrt{2}+\sqrt{6},-\sqrt{2}+\sqrt{6}\right)$
5. $\left(2,\frac{7\pi}{4}\right)$	$\left(\sqrt{2},-\sqrt{2}\right)$
6. $\left(-5\sqrt{2},-\frac{5}{3}\pi\right)$	$\left(\frac{5\sqrt{2}}{2},-\frac{5\sqrt{6}}{2}\right)$
7. $\left(\frac{1}{2},-\frac{\pi}{8}\right)$	$\left(\frac{\sqrt{2+\sqrt{2}}}{4},-\frac{\sqrt{2-\sqrt{2}}}{4}\right)$
8 $\left(0,\frac{4}{3}\pi\right)$	$(0,0)$

Practice 2

Convert the rectangular coordinates to (exact value of) the polar coordinate, (find 2 representations of the given coordinates) if $\theta\in[-\pi,\pi)$

(x,y)	(r,θ)
1. (2,2)	$\left(2\sqrt{2},\frac{\pi}{4}\right),\left(-2\sqrt{2},-\frac{3\pi}{4}\right)$
2. (-3, 4)	$\left(5,\arctan\left(-\frac{4}{3}\right)+\pi\right),\left(-5,\arctan\left(-\frac{4}{3}\right)\right)$
3. $(\sqrt{3},-1)$	$\left(2,-\frac{\pi}{6}\right),\left(-2,\frac{5\pi}{6}\right)$
4. $(-4,2)$	$\left(2\sqrt{5},\pi+\arctan\left(-\frac{1}{2}\right)\right),\left(-2\sqrt{5},\arctan\left(-\frac{1}{2}\right)\right)$

5. $(-5,-5\sqrt{3})$	$\left(10,-\frac{2}{3}\pi\right)$, $\left(-10,\frac{\pi}{3}\right)$
6. $\left(2\sqrt{6},\sqrt{7}\right)$	$\left(\sqrt{31},\arctan\left(\frac{\sqrt{42}}{24}\right)\right)$, $\left(-\sqrt{31},\arctan\left(\frac{\sqrt{42}}{24}\right)-\pi\right)$
7. $\left(-5,12\right)$	$\left(13,\arctan\left(-\frac{12}{5}\right)+\pi\right)$, $\left(-13,\arctan\left(-\frac{12}{5}\right)\right)$
8. $(1,2)$	$\left(\sqrt{5},\arctan 2\right)$, $\left(-\sqrt{5},-\pi+\arctan 2\right)$