AdvAlg2, Homework due Friday, 5/5

Sketch the angle α whose terminal side in standard position passes through the given point, and find $\sin\alpha$ and $\cos\alpha$. Leave your answers in fractional form.

1. $(8, 6)$
2. $(-3, 4)$
3. $(12, -5)$
4. $(8, 15)$
5. $(0, 2)$
6. $(-3, -3)$
7. $(2, 4)$
8. $(-2, 3)$
9. $(-3, -4)$
10. $(-5, 0)$

In Exercises 11–18, find $\sin\alpha$ or $\cos\alpha$, whichever is not given, for α in the given quadrant.

EXAMPLE $\sin\alpha = \frac{4}{5}$; II

SOLUTION Since $\sin^2\alpha + \cos^2\alpha = 1$ for every angle α, you have $(\frac{4}{5})^2 + \cos^2\alpha = 1$.

$\cos^2\alpha = 1 - \frac{16}{25} = \frac{9}{25}$ and $\cos\alpha = \frac{3}{5}$ or $\cos\alpha = -\frac{3}{5}$

Since α is in the second quadrant, $\cos\alpha < 0$.

$\therefore$ choose $\cos\alpha = -\frac{3}{5}$. Answer.

11. $\sin\alpha = -\dfrac{5}{13}$; IV
12. $\sin\alpha = -\dfrac{12}{13}$; III
13. $\cos\alpha = \dfrac{8}{17}$; I
14. $\cos\alpha = -\dfrac{24}{25}$; II
15. $\cos\alpha = \dfrac{1}{3}$; IV
16. $\sin\alpha = -\dfrac{\sqrt{2}}{2}$; III
17. $\sin\alpha = \dfrac{\sqrt{3}}{2}$; II
18. $\cos\alpha = \dfrac{\sqrt{10}}{10}$; I