20. Angles are given in 'standard' fashion, so Eq. 3-5 applies directly. We use this to write the vectors in unit-vector notation before adding them. However, a very different-looking approach using the special capabilities of most graphical calculators can be imagined. Where the length unit is not displayed in the solution below, the unit meter should be understood.

(a) Allowing for the different angle units used in the problem statement, we arrive at

$$\begin{aligned}
\vec{E} &= 3.73\,\hat{\mathrm{i}} + 4.70\,\hat{\mathrm{j}} \\
\vec{F} &= 1.29\,\hat{\mathrm{i}} - 4.83\,\hat{\mathrm{j}} \\
\vec{G} &= 1.45\,\hat{\mathrm{i}} + 3.73\,\hat{\mathrm{j}} \\
\vec{H} &= -5.20\,\hat{\mathrm{i}} + 3.00\,\hat{\mathrm{j}} \\
\vec{E} + \vec{F} + \vec{G} + \vec{H} &= 1.28\,\hat{\mathrm{i}} + 6.60\,\hat{\mathrm{j}}\ .
\end{aligned}$$

(b) The magnitude of the vector sum found in part (a) is $\sqrt{1.28^2 + 6.60^2} = 6.72$ m. Its angle measured counterclockwise from the $+x$ axis is $\tan^{-1}(6.6/1.28) = 79^\circ = 1.38$ rad.