Chapter 9, Solution 14.

(a) $$\frac{3-j14}{-7+j17} = \frac{14.318\angle -77.91^\circ}{18.385\angle 112.38^\circ} = 0.7788\angle 169.71^\circ = \underline{-0.7663 + j0.13912}$$

(b)
$$\frac{(62.116 + j231.82 + 138.56 - j80)(60 - j80)}{(67 + j84)(16.96 + j10.5983)} = \frac{24186 - 6944.9}{246.06 + j2134.7} = \underline{-1.922 - j11.55}$$

(c) $$\left[\frac{10 + j20}{3 + j4}\right]^2 \sqrt{(10 + j5)(16 - j20)}$$

$= [(22.36\angle 63.43^\circ)/(5\angle 53.13^\circ)]^2[(11.18\angle 26.57^\circ)(25.61\angle -51.34^\circ)]^{0.5}$
$= [4.472\angle 10.3^\circ]^2[286.3\angle -24.77^\circ]^{0.5} = (19.999\angle 20.6^\circ)(16.921\angle -12.38^\circ) = 338.4\angle 8.22^\circ$

or **334.9+j48.38**