FP1 Quiz 3

1) The two complex roots of the equation $2x^2 + 3x + 5$ are α and β. What does $\alpha\beta$ equal?
   a. $\frac{5}{2}$
   b. $\frac{2}{5}$
   c. $\frac{10}{4}$
   d. $\frac{-22}{16}$
   e. $\frac{22}{16}$
2) Find the modulus of $\frac{7-i}{3-4i}$
   a. $\frac{\sqrt{50}}{\sqrt{25}}$
   b. $2\sqrt{2}$
   c. $\frac{\sqrt{25}}{\sqrt{50}}$
   d. $3\sqrt{3}$
   e. $\sqrt{2}$
3) $(2 \quad 4 \quad 6)\begin{pmatrix} 3 \\ 2 \\ -1 \end{pmatrix} =$
   a. 20
   b. -8
   c. 8
   d. $\begin{pmatrix} 6 \\ 8 \\ -6 \end{pmatrix}$
   e. None of these.
4) $\sum_{r=n}^{2n} r^2(1+r) =$
   a. $\frac{1}{12}n(n+1)(45n^2+37n+2)$
   b. $\frac{1}{4}n(n+1)(45n^2+37n+2)$
   c. $\frac{1}{12}n(n-1)(45n^2+37n+2)$
   d. $\frac{1}{4}n(n+1)(45n^2-37n+2)$
   e. $\frac{1}{24}n(n^2+1)(45n^2-37n+2)$
5) What matrix represents a reflection in the line $= -x$?

a. $\begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}$

b. $\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$

c. $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

d. $\begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$

e. $\begin{pmatrix} 0 & -1 \\ -1 & 0 \end{pmatrix}$

1) D
2) E
3) C
4) A
5) E