# FP1 Quiz 4

1) If $z^2 = 7 + 24i$ then $z =$
   a. $z = 4 + 3i$ and $z = -4 - 3i$
   b. $z = 4 + 3i$ and $z = 4 - 3i$
   c. $z = 4 + 3i$ and $z = -4 + 3i$
   d. $z = \sqrt{7} + \sqrt{24}i$ and $-\sqrt{7} - \sqrt{24}i$
   e. $z = -\sqrt{7} - \sqrt{24}i$ and $z = \sqrt{7} + \sqrt{24}i$

2) $\sum_{r=1}^{4} \frac{r}{(r+1)!} =$
   a. $\frac{119}{120}$
   b. $\frac{719}{720}$
   c. $\frac{23}{24}$
   d. $\frac{109}{120}$
   e. $\frac{5}{6}$

3) Solve the following equation for $x$ and $y$
$$x + yi = (3 + i)(2 - i)$$
   a. $x = 9, y = -7$
   b. $x = -9, y = -7$
   c. $x = 3, y = 11$
   d. $x = 3, y = -11$
   e. $x = -9, y = 7$

4) $\begin{pmatrix} 1 & 2 & 3 \\ 1 & 3 & 4 \end{pmatrix}^2 =$
   a. $\begin{pmatrix} 3 & 7 \\ 1 & 4 \end{pmatrix}$
   b. $\begin{pmatrix} 1 & 4 & 9 \\ 1 & 9 & 16 \end{pmatrix}$
   c. 40
   d. None of these.
   e. $\begin{pmatrix} 1 & 1 \\ 4 & 9 \\ 9 & 16 \end{pmatrix}$

5) The equation $x^2 + 3x + 1 = 0$ has
   a. No roots.
   b. One real and one complex root.

c. Two imaginary roots.
d. Two real roots.
e. Two complex roots.

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