Answers to Homework 8 questions.

_____ Question 1 _____
The solution is
 -1
  0
  2
Therefore, the answer is c).
_____

_____ Question 2 _____
The product is
 2 5 3
 0 8 2
 2 4 4
Therefore, the answer is c).
_____

_____ Question 3 _____
The eigenvalues are
{2: 1, 2 - I: 1, 2 + I: 1}
Therefore the answer is a).
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_____ Question 4 _____
The matrix A from the problem is
 8 -7/2 -3
 12 -5   -6
 8   -4   -2
The change of basis P is
 1 1 1
 2 0 2
 0 2 1
Therefore, the answer is c).
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_____ Question 5 _____
The solution is
y1 (t) = Eq(x(t), C1*exp(2*t) + C2*exp(4*t)/3 + C3*exp(6*t))
y2 (t) = Eq(y(t), C1*exp(2*t) + 2*C2*exp(4*t)/3)
y3 (t) = Eq(z(t), C1*exp(2*t) + C2*exp(4*t) + C3*exp(6*t))

Therefore, the answer is b).
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