Assignment 1

The due date for submitting this assignment has passed.

The last day for submitting this assignment has passed.

1. Which of the following matrices, provided with the answer, are equivalent? 1 point

(a) $egin{pmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \\ 7 & 8 \end{pmatrix}$

(b) $egin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$

(c) $egin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{pmatrix}$

2. Which of the following are linear maps? 1 point

(a) $f(x) = 2x + 3$

(b) $f(x) = x^2$

(c) $f(x) = e^x$

3. Which of the following are homomorphisms? 1 point

(a) $f(x) = x^2$

(b) $f(x) = e^x$

(c) $f(x) = e^{-x}$

4. Which of the following are isomorphisms? 1 point

(a) $f(x) = x^2$

(b) $f(x) = e^x$

(c) $f(x) = e^{-x}$

5. Which of the following are bijections? 1 point

(a) $f(x) = x^2$

(b) $f(x) = e^x$

(c) $f(x) = e^{-x}$

6. Which of the following are homeomorphisms? 1 point

(a) $f(x) = x^2$

(b) $f(x) = e^x$

(c) $f(x) = e^{-x}$

7. Which of the following are continuous functions? 1 point

(a) $f(x) = x^2$

(b) $f(x) = e^x$

(c) $f(x) = e^{-x}$

8. Which of the following are measurable functions? 1 point

(a) $f(x) = x^2$

(b) $f(x) = e^x$

(c) $f(x) = e^{-x}$