

M244 Review Guide for Test 1: Partial Answer Key for Practice Questions

1. F

2. T

3. $\cos(\pi)x + y - z = 6$

$3.1x + 2.2y - 3z = 0$

$3x + \sqrt{2}y = 6$

4. identity

5. homogeneous

6. transpose

7. diagonal

8. invertible

9. square

10. symmetric

11. a)

12. B and C

13. a) i

b) one solution

14. a) $R3 + 2R2$

b) $R1 \leftrightarrow R2$

15. $x_1 = -r$; $x_2 = -2r$, $x_3 = r$, where r is any real number.

16b) $x_1 = 1$; $x_2 = 4$, $x_3 = 2$

17. $A + B = B + A$

$c(AB) = (cA)$

$A(BC) = A(BC)$

18. a) $A + 2B$

5. -2. 1.

0. 3. 12.

1. 6. 6.

b) AB

6. 0. 25.

-1. 6. 18.

2. 9. 4.

c) CA not defined.

d) 8

f) 1. -2. 1.

4. 3. 0.

1. 0. 4.

e) -6. 16. 5.

-8. 1. -2.

5. 4. 17.

20. T

21. Proven in class – see notes or text

22. Inverse exists (show by $\text{rref}(A|I)$).

$$\begin{array}{ccc} 1/2 & -1/2 & 0 \\ 0 & 1/3 & 0 \\ 0 & 0 & 1/4 \end{array}$$

23. Proven in class – see notes or text

24. a) 2 b) -2

25. 64