

QUIZ SOLUTIONS

1. Quiz First Day: A, A, A, B (no zero multiple), A, A, B, D (need to know variables), B (lots of solutions), A
2. Quiz 1.1: B, A, B, A (same solutions), B (not by zero), B (apply to different things; also different), B (technically two; I made this accidentally a poor question), A, A, A, A ($a = b = 0$)
3. Quiz 1.2: B (need zero above pivot), B (get pivots from echelon form), A (if exactly two free variables), A, B, B
4. Quiz 1.3: A, A, A, A, A, A
5. Quiz 1.4: A, A, B (it's a plane), A (i.e. it can't have more), D (confusing), B (wrong version of Thm from book)
6. Quiz 1.5: B (always trivial solution), A, B, B, B (wrong version of Thm from book), B (3 rows, 2 pivots means it has a zero row)
7. Quiz 1.6: A, A, A
8. Quiz 1.7: A, A, B (zero vec is dependent by itself), B (must be dependent), A, B (e.g. if $\mathbf{v} = \mathbf{w}$)
9. Quiz 1.8: B (wrong dimensions), B (missing scalar), A, B (contraction)
10. Quiz 1.9: B (flip the matrix to make it true), B (check where standard basis vectors go), A (independent cols, but not enough of them), A (fewer cols than rows), B (cols could be indep)
11. Quiz 1.10: A, B (sign error), B (entries in the wrong places)
12. Quiz 2.1: A, B (can't always cancel), B (swap rows and cols), B ($(AB)^T = B^T A^T$), A.
13. Quiz 2.2: A, A, A, A, B ($(AB)^{-1} = B^{-1} A^{-1}$).
14. Quiz 2.3: B (zero col), A, A, A (A invertible implies A^T invertible), A, A
15. Quiz 2.8: A, B (of codomain), A, A, B (not if they're dependent), B (doesn't contain zero vector if \mathbf{b} is nonzero).
16. Quiz 2.9: A, A, A, B, A (col vecs are independent), A

17. Quiz 3.1: A, B (determinant is 12, product of diagonal), B ($\det(5M) = 25 \det(M)$).
18. Quiz 3.2-3: B (if and only if nonzero), B (slight changes depending on which operation), A, B, B (absolute value of determinant)
19. Quiz 4.1: A, B (it is *isomorphic* to a subspace), A (recognize it as a span), A (check properties)
20. Quiz 4.2: B (multiply $A\mathbf{v}$ and fail to get zero), A (it's the first col), B (not if domain and codomain are different), A, A
21. Quiz 4.3: B, A, B, B, A, B (questions 4-6 same as 1-3), B (dependent), B (don't span)
22. Quiz 4.4: B (order matters), A (work out linear combination), A (basis means unique rep), A
23. Quiz 4.5: A, B, B, A, B (could be 23), A
24. Quiz 4.6: A, A, A, B, B, B, B (dimensions equal though)
25. Quiz 4.7: B (order matters), A, A
26. Quiz 4.8: B, A, A, B, A
27. Quiz 4.9: A, B, B, A, B
28. Quiz 5.1: A, A, B, B, B
29. Quiz 5.2-3: A, A, B, A, A, B
30. Quiz 5.4: B, A, B
31. Quiz 5.6: A, A, B
32. Quiz 5.7: A, A, A
33. Quiz 6.1: A, B, B, A, A
34. Quiz 6.2-3: B, B, A, A, A, A, B
35. Quiz 6.4: A, B, A