

Assignment 1, Discrete Math
Covers sections 0.1 and 0.2

The problems below provide some good practice for analyzing mathematical statements and formulating mathematical arguments and proofs.

1. 0.1 #2(f)-(n)
2. 0.1 #3(a), (b), (h)-(j)
3. 0.1 #5(d), (h), (i), (j)
4. 0.1 #6(a), (i)-(l)
5. 0.1 #7(a), (g), (m)
6. 0.2 #3(b), (e)
7. 0.2 #12
8. 0.2 #22, 23
9. 0.2 #24
10. 0.2 #25
11. 0.2 #29
12. We say that an integer n is a *perfect square* provided $n = k^2$ for some integer k .
 - (a) Prove that the difference of two consecutive perfect squares is an odd integer.
 - (b) Is it true that every odd integer can be expressed as the difference of two consecutive perfect squares? Either prove it is true, or give a counterexample showing it is false.
13. Explain what is wrong with the sentence "A line is the shortest distance between two points."
Rewrite the sentence properly.