文本

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**Ans:** (b), (c), (d), (e) are statements.

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**Ans:** (a), (b), (d), (e), (f) is true because “P -> Q” is only false when P is true and Q is false.

**文本, 信件

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**Ans:**

(a): Yes

(b): No

(c): Yes

(d): Yes

(e): Yes

图形用户界面, 文本, 应用程序, 电子邮件

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|  |  |
| --- | --- |
| Know | Show |
| m is an odd integer | 5m^2 + 8m + 4 is an odd integer |
| Definition of odd integer -> m = 2k + 1, where k is an integer. |  |

1. Given m is an odd integer number, we know that there exists an integer k that let m = 2k + 1. (Definition of odd number).
2. Sub m = 2k + 1, into 5m2 + 8m + 4 -> 5(2k+1)2 + 8(2k+1) + 4 (by algebra)
3. That gives us: 5(4k2+4k+1) + 16k + 8 +4 (by algebra)
4. Then we have 20k2 + 36k +17 (by algebra)
5. This can be written as 2(10k2 + 18k + 8) + 1 (by algebra)
6. Let n = 10k2 + 18k + 8, we have “2(10k2 + 18k + 8) + 1=2n+1”(by algebra). And because “k” is an integer, we know that “n” will also be an integer number(by the closure property of integer). we now can conclude that 2n + 1 ( = 5m2 + 8m + 4) is an odd integer (by odd integer definition).
7. So, we proof it is true that “If m is an odd integer, then 5m2 + 8m + 4 is an odd integer”.

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1. Since m and n are odd integers, we know by the definition of odd integers that m = 2k + 1 and n = 2q + 1, where “k” and “q” are integers.
2. We also know by the definition of even integer that p = 2a, where “a” is an integer.
3. Sub the (1) and (2) in to “mn+p”, we get: (2k+1)\*(2q+1) + (2a). (by algebra)
4. Where gives us 4kq + 2k +2q + 1 + 2a. (by algebra)
5. Which can be written in the form of 2(2kq + k + q + a) + 1. (by algebra)
6. Let i = 2kq+k+q+a, so we have “2(2kq + k + q + a) + 1 = 2i + 1” since “k”, “q”, and “a” are integers, from the closure property of integer we know “i” is also an integer. And we can conclude that 2i +1 is an odd integer (definition of odd integer).
7. So, we proof it is true that “If m and n are odd integers and p is an even integer, then mn+p is an odd integer.”