

Translate into Predicate Logic

Translation key:

1. Every clever student is ambitious.
2. Every ambitious student is clever.
3. Every student is both clever and ambitious.
4. Every student is either clever or not ambitious.
5. Every student who is ambitious is clever.
6. Every student who is clever is ambitious.
7. Some clever students are ambitious.
8. Some clever students are not ambitious.
9. Not every clever student is ambitious.
10. Not every ambitious student is clever.
11. Some ambitious students are not clever.
12. No ambitious student is clever.
13. No clever student is ambitious.
14. No student is either clever or ambitious.
15. No student is both clever and ambitious.
16. Every ambitious person is a clever student.
17. No ambitious person is a clever student.
18. Some ambitious persons are not clever students.
19. Not every ambitious person is a clever student.
20. Not all clever persons are students.
21. Unless every professor is friendly, no student is happy.
22. Every student is happy, only if every professor is friendly.
23. No student is unhappy, unless every professor is unfriendly.

$C(x)$	x is clever.
$S(x)$	x is a student.
$A(x)$	x is ambitious.
$P(x)$	x is a person.
$R(x)$	x is a professor.
$F(x)$	x is friendly.
$H(x)$	x is happy.
$E(x)$	x passes the exam.
$I(x)$	x fails the exam.
$T(x)$	x studies.

24. If everyone passes the exam, then everyone will be happy.
25. If anyone passes the exam, then everyone will be happy.
26. If everyone fails the exam, then no one will be happy.
27. If anyone fails the exam, then no one will be happy.
28. The only students who pass the exam are the ones who study.

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