2.25

P13

14a： r → ¬q

14c： p → r

14e： （p∧q） → r

P14

23：

a: If the wind blows from the northeast, then it will snow.

b: If it stays warm for a week, than the apple trees will bloom.

c: If Pistons beat the Lakers, then they will win the championship.

d: If you want to get to the top of Long’s Peak, then it is necessary for you to walk 8 miles.

e: If you want to get tenure as a professor, then it is sufficient for you to be world-famous.

f: If you drive more than 400 miles, then you will need to buy gasoline.

g: If you bought your CD players less than 90 days ago, then your guarantee is good.

h: If the water is not too cold, Jan will go swimming.

P15

33a：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| p | q | p∨q | p⊕q | (p∨q)→(p⊕q) |
| T | T | T | F | F |
| T | F | T | T | T |
| F | T | T | T | T |
| F | F | F | F | T |

33c：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| p | q | p∨q | p∧q | (p∨q)⊕(p∧q) |
| T | T | T | T | F |
| T | F | T | F | T |
| F | T | T | F | T |
| F | F | F | F | F |

33f：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| p | q | ¬q | p⊕q | p⊕¬q | (p⊕q)→(p⊕¬q) |
| T | T | F | F | T | T |
| T | F | T | T | F | F |
| F | T | F | T | F | F |
| F | F | T | F | T | T |

2.28

P22

7:

a: q → p

b: q → ¬p

c: q → p

d: ¬q → ¬p

P23

19:

A is a knight

B is a knave