Section 1.3

1.

c) Let $x \in$ (All triangles).
Let $R(x) = x$ is a right triangle
Let $I(x) = x$ is an isosceles triangle
Symbolically, the statement is:
$(\exists x)(P(x) \wedge R(x))$

d) Note: Using definitions from part **c**
Symbolically, the statement is:
$(\forall x)(P(x) \Rightarrow \sim I(x))$

e) Note: Using definitions from part **c**
Symbolically, the statement is:
$(\forall x)(\sim I(x) \Rightarrow R(x))$

f) Let $x \in$ (All people)
Let $H(x) = x$ is honest.
Symbolically, the statement is:
$(\forall x)(H(x)) \vee (\forall x)(\sim H(x))$

g) Note: Using definitions from part **f**
Let $y \in$ (All people)
Symbolically, the statement is:
$(\exists x)(H(x)) \wedge (\exists y)(\sim H(y))$

h) Let $x \in \mathbb{R}$
Symbolically, the statement is:
$(\forall x)(x \neq 0 \Rightarrow (x > 0 \vee x < 0))$

j) Let $x, y \in \mathbb{Z}$
Symbolically, the statement is:
$(\forall x)(\exists y)(x > y)$

l)

o)

p)

2.

c)

d)

e)

f)

g)

h)

j)

l)

o)

p)

6.

b)

c)

d)

7.

a) ***Proof:***

b)

8.

a)

c)

d)

f)

g)

Section 1.3

i)

j)

k)

l)

12.

b)

c)

d)

e)

f)

g)

h)