

Question 10

P# 91209

1. Ex. 1.7.9, sections c-i

$$\rightarrow x=9 \rightarrow F \rightarrow T \boxed{\text{True}}$$

C. $\exists x ((x=c) \rightarrow P(x))$

$$\boxed{\text{True}} \boxed{\text{True}}$$

D. $\exists x (Q(x) \wedge R(x))$

$$\boxed{\text{True} \rightarrow Q(e) \wedge R(e)}$$

E. $Q(a) \wedge P(d) \rightarrow T \wedge T$

$$\boxed{\text{True}}$$

F. $\forall x ((x \neq b) \rightarrow Q(x))$

$$\boxed{\text{True}}$$

~~and every value of x makes this true~~

~~no value except $x=b$ makes this~~

~~false~~

G. $\forall x (P(x) \vee R(x))$

$$\boxed{\text{False}} \quad x=c$$

H. $\forall x (R(x) \rightarrow P(x))$

$$\boxed{\text{True}}$$

I. $\exists x (Q(x) \vee R(x))$

$$\boxed{\text{True}} \quad x=e$$

2. Ex 1.9.2, sections 6-i

B. $\exists x \forall y Q(x, y)$

$$\boxed{\text{True}}$$

$$x=2$$

H. $\exists x \exists y Q(x, y)$

True $Q(3, 1)$

C. $\exists y \forall x P(x, y)$

$$\text{True}$$

$$y=1$$

D. $\exists x \exists y S(x, y)$

$$\text{False}$$

I. $\forall x \forall y \neg S(x, y)$

True

E. $\forall x \exists y Q(x, y)$

$$\text{False} \quad x=1$$

F. $\forall x \exists y P(x, y)$

$$\text{True}$$

G. $\forall x \forall y P(x, y)$

$$\text{False}$$

$$\cancel{x=1, y=2}$$

$$P(1, 2)$$