

(a) 
$$\frac{p \rightarrow q}{\sim p \rightarrow \sim q}$$


Summary truth table:


**Is it a counterexample row?**

- yes    no
- yes    no
- yes    no
- yes    no

The argument form is \_\_\_\_\_ because \_\_\_\_\_

---

(b) 
$$\frac{p \rightarrow q}{\sim q \rightarrow \sim p}$$


Summary truth table:


**Is it a counterexample row?**

- yes    no
- yes    no
- yes    no
- yes    no

The argument form is \_\_\_\_\_ because \_\_\_\_\_

---

(c) 
$$\frac{p}{p \bullet q}$$


Summary truth table:


**Is it a counterexample row?**

- yes    no  
 yes    no  
 yes    no  
 yes    no

The argument form is \_\_\_\_\_ because \_\_\_\_\_

(d) 
$$\frac{p}{p \vee q}$$


Summary truth table:


**Is it a counterexample row?**

- yes    no  
 yes    no  
 yes    no  
 yes    no

The argument form is \_\_\_\_\_ because \_\_\_\_\_

(e) 
$$\frac{p}{p \rightarrow q}$$


Summary truth table:


**Is it a counterexample row?**

- yes    no  
 yes    no  
 yes    no  
 yes    no

The argument form is \_\_\_\_\_ because \_\_\_\_\_

---

(f) 
$$\frac{p}{q \rightarrow p}$$


Summary truth table:


**Is it a counterexample row?**

- yes    no  
 yes    no  
 yes    no  
 yes    no

The argument form is \_\_\_\_\_ because \_\_\_\_\_

---



$$(h) \quad \frac{\begin{array}{l} p \rightarrow q \\ p \rightarrow r \end{array}}{q \rightarrow r}$$


Summary truth table:


**Is it a counterexample row?**

- yes  no
- yes  no
- yes  no
- yes  no
- yes  no
- yes  no
- yes  no
- yes  no
- yes  no
- yes  no

The argument form is \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_

(i) 
$$\frac{p \rightarrow r}{q \rightarrow r} \quad \frac{q \rightarrow r}{(p \vee q) \rightarrow r}$$


Summary truth table:


**Is it a counterexample row?**

- yes    no
- yes    no
- yes    no
- yes    no
- yes    no
- yes    no
- yes    no
- yes    no
- yes    no
- yes    no

The argument form is \_\_\_\_\_ because \_\_\_\_\_







