The Logic of Compound Statements · Partner Check 1

A

Name: _____ Partner's name: _____ Date: _____

Directions: Work alone on your own problems. Partner B has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

Give the truth column of ¬p → ¬q (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

2

Give the truth column of ¬(¬p ∨ ¬q) (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

3

How many rows does a truth table with 3 variables have?

Answer: _____ Match? ☐ Yes ☐ No

4

In how many rows of its truth table (variables p, q) is p ∧ (p ∨ q) true?

Answer: _____ Match? ☐ Yes ☐ No

5

In how many rows of its truth table (variables p, q) is q → p true?

Answer: _____ Match? ☐ Yes ☐ No

6

How many rows does a truth table with 4 variables have?

Answer: _____ Match? ☐ Yes ☐ No

The Logic of Compound Statements · Partner Check 1

B

Name: _____ Partner's name: _____ Date: _____

Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

Give the truth column of p ∨ ¬q (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

2

Give the truth column of p ∧ q (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

3

How many rows does the truth table for p ∧ q ∧ r have?

Answer: _____ Match? ☐ Yes ☐ No

4

In how many rows of its truth table (variables p, q) is p ⊕ q true?

Answer: _____ Match? ☐ Yes ☐ No

5

In how many rows of its truth table (variables p, q) is ¬(p ∧ ¬q) true?

Answer: _____ Match? ☐ Yes ☐ No

6

How many rows does the truth table for p ∧ q ∧ r ∧ s have?

Answer: _____ Match? ☐ Yes ☐ No

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A

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Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

Premises: p ∨ q; q. Conclusion: p. Give the only row that makes every premise true and the conclusion false.

Answer: _____ Match? ☐ Yes ☐ No

2

Give the truth column of (p → q) ∧ (q → p) (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

3

Premises: p ↔ q; r. Conclusion: p. Give the only row that makes every premise true and the conclusion false.

Answer: _____ Match? ☐ Yes ☐ No

4

In how many rows of its truth table (variables p, q) is p ∧ q true?

Answer: _____ Match? ☐ Yes ☐ No

5

In how many rows of its truth table (variables p, q) is ¬p → ¬q true?

Answer: _____ Match? ☐ Yes ☐ No

6

Give the truth column of ¬p → q (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

The Logic of Compound Statements · Partner Check 1

B

Name: _____ Partner's name: _____ Date: _____

Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

Premises: p → q; q. Conclusion: p. Give the only row that makes every premise true and the conclusion false.

Answer: _____ Match? ☐ Yes ☐ No

2

Give the truth column of ¬(p ⊕ q) (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

3

Premises: p → q; r. Conclusion: q. Give the only row that makes every premise true and the conclusion false.

Answer: _____ Match? ☐ Yes ☐ No

4

In how many rows of its truth table (variables p, q) is ¬(¬p ∨ ¬q) true?

Answer: _____ Match? ☐ Yes ☐ No

5

In how many rows of its truth table (variables p, q) is ¬p → q true?

Answer: _____ Match? ☐ Yes ☐ No

6

Give the truth column of p ∨ q (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

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A

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1

Premises: ¬q → ¬p; ¬p. Conclusion: ¬q. Give the only row that makes every premise true and the conclusion false.

Answer: _____ Match? ☐ Yes ☐ No

2

In how many rows of its truth table (variables p, q, r) is (p ∨ q) → r true?

Answer: _____ Match? ☐ Yes ☐ No

3

Give the truth column of (p ∨ q) ∧ (p ∨ r) (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

4

In how many rows of its truth table (variables p, q) is ¬(p ∨ q) true?

Answer: _____ Match? ☐ Yes ☐ No

5

Premises: p ↔ q; r. Conclusion: p. Give the only row that makes every premise true and the conclusion false.

Answer: _____ Match? ☐ Yes ☐ No

6

Give the truth column of (p ∧ q) ∨ (p ∧ r) (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

The Logic of Compound Statements · Partner Check 1

B

Name: _____ Partner's name: _____ Date: _____

Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

Premises: p → q; ¬p. Conclusion: ¬q. Give the only row that makes every premise true and the conclusion false.

Answer: _____ Match? ☐ Yes ☐ No

2

In how many rows of its truth table (variables p, q, r) is (p → r) ∧ (q → r) true?

Answer: _____ Match? ☐ Yes ☐ No

3

Give the truth column of p ∨ (q ∧ r) (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No

4

In how many rows of its truth table (variables p, q) is p ∧ q true?

Answer: _____ Match? ☐ Yes ☐ No

5

Premises: p → q; r. Conclusion: q. Give the only row that makes every premise true and the conclusion false.

Answer: _____ Match? ☐ Yes ☐ No

6

Give the truth column of p ∧ (q ∨ r) (standard row order, T/F string).

Answer: _____ Match? ☐ Yes ☐ No