

EXTRA PRACTICE 2.2 DEDUCTIVE REASONING

Write the hypothesis and conclusion of each conditional statement.

1. If a figure is part of a line, then it is a line segment.

2. If B is on \overline{AC} such that $AB = BC$, then B is the midpoint of \overline{AC} .

3. You will earn more money if you work more hours.

4. A square has four right angles.

Write the following statements as conditionals.

5. Marvin turns his car heater on when it is cold.

6. Kira always writes a check when she buys groceries.

7. Intersecting lines form two pairs of vertical angles.

Identify each of the following as an example of inductive or deductive reasoning.

8. If the product of two numbers is 1, the numbers are reciprocals. _____
9. One out of four students were in the marching band last year. One out of four students will be in the marching band this year.

Use deductive reasoning to draw conclusions from the following statements.

10. If two integers are even, then their sum is even. One integer is -6 and the other is 2 .

11. Every box of cereal made with oats contains a prize. Rick bought a box of cereal made with oats.

EXTRA PRACTICE 2.3 LOGICAL REASONING

Use the statement "All squares are rectangles" for Exercises 1–5.

1. Rewrite the statement as a conditional.

2. Write the converse of the conditional.

3. Illustrate the conditional with a Venn diagram.

4. Illustrate the converse with a Venn diagram.

5. What conclusion can you make about the truth of the conditional and its converse from the Venn diagrams?

For Exercises 6–7, write the converse of the conditional. Combine the conditional and its converse to write a biconditional.

6. If a figure is a line segment, then it contains at least two distinct points.

7. If it is snowing, then it is cold outside.

Use the statement "If the temperature is at or below 32°F , then water will freeze" for Exercises 8–9.

8. State whether the conditional is true or false. If it is false, give a counterexample.

9. Write the converse and state whether it is true or false. If it is false, give a counterexample.

Also do

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