Name: _____

3-1 Additional Practice

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1. The set of ordered pairs (1, 7), (3, 8), (3, 6), (6, 5), (2, 11), (1, 4) represents a relation.

a. Make an arrow diagram that represents the relation.

b. Is the relation a function? Explain.

2. Is the relation shown in the table a function? Explain.

Input	Output
1	3
2	6
3	9
4	12

3. The relation shown below represents the temperature, in degrees Celsius, of the air a certain number of hours after noon on a winter day. Is the temperature a function of time? Explain.

(2, −1), (1, −6), (6, −3), (4, −7)

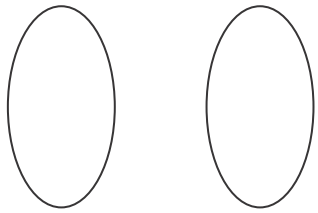
4. Make an arrow diagram to represent the relation shown in the table. Is the relation a function? Explain.

Input	Output
1	2
11	32
15	2
16	32

5. Construct Arguments The set of ordered pairs (1, 8.50), (3, 25.50), (5, 42.50), (6, 51), (7, 59.50) represents the cost of tickets for the school play for different numbers of tickets. The input represents the number of tickets, and the output represents the total cost. Is the cost a function of the number of tickets? Explain. MP.3

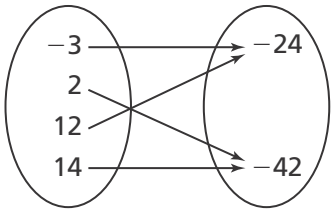
6. a. Use Structure How can an arrow diagram help to determine whether a relation is a function? MP.7

b. Make an arrow diagram that describes the relation (3, 39), (6, 39), (9, 78), (15, 117).



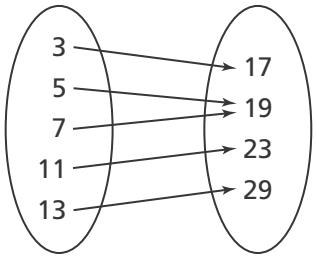
7. Higher Order Thinking Jan made the arrow diagram below to determine whether the relation shown in the table represents a function. She determines that the relation is not a function. Is Jan's answer correct? Explain your response.

Input	Output
−3	−24
2	−42
12	−24
14	−42



Assessment Practice

8. Is the set of ordered pairs presented in the arrow diagram a function? Explain.



9. Which of these relations are functions? Select all that apply.

- ☐ (4, 4), (5, 6), (6, 8), (6, 10), (7, 12)
- ☐ (6, 9), (7, 19), (8, 29), (8, 39), (9, 49)
- ☐ (4, 4), (5, 4), (6, 4), (7, 4), (8, 4)
- ☐ (7, 33), (8, 30), (9, 27), (10, 24), (11, 21)