Name Class Date

Reflections

**Find the coordinates of each image.**

**1.** *Rx*-axis(*A*)

**2.** *Ry*-axis(*B*)

**3.** *Ry* = 1(*C*)

**4.** *Rx* = –1(*D*)

**5.** *Ry* = –1(*E*)

**6.** *Rx* = 2(*F*)

**Coordinate Geometry Given points *M*(3, 3), *N*(5, 2), and *O*(4, 4), graph
Δ*MNO* and its reflection image as indicated.**

|  |  |
| --- | --- |
| **7.** *Ry*-axis | **8.** *Rx*-axis |

|  |  |
| --- | --- |
| **9.** *Rx* = 1 | **10.** *Ry* = –2 |

**Find the image of *Z*(1, 1) after two reflections, first across line *ℓ*1*,* and then
across line *ℓ*2*.***

|  |  |
| --- | --- |
| **11.** *ℓ*1 : *x* = 2, *ℓ*2 : *y*-axis | **12.** *ℓ*1 : *x* = –2, *ℓ*2 : *x*-axis |
| **13.** *ℓ*1 : *y* = 2, *ℓ*2 : *x*-axis | **14.** *ℓ*1 : *y* = –3, *ℓ*2 : *y*-axis |
| **15.** *ℓ*1 : *x* = 3, *ℓ*2 : *y* = 2 | **16.** *ℓ*1 : *x* = –1, *ℓ*2 : *y* = –3 |

**Use the graph at the right for Exercises 23 and 24.**

**17.** Berit lives 3 mi east of Rt. 147 and 1 mi north of Rt. 9. Jane
lives 3 mi east of Rt. 147 and 5 mi north of Rt. 9. The girls
want to start at Berit’s house, hike to Rt. 147, then on to
Jane’s house. They want to hike the shortest distance
possible. To which point on Rt. 147 should they walk?
(*Hint*: First find the line of reflection if Berit’s house is
reflected onto Jane’s house.)

**18.** Instead of ending the hike at Jane’s house, the girls want to hike to an inn 2 mi
north of Jane’s house. They want to hike the shortest possible total distance,
starting from Berit’s house, walking to Rt. 147, and then to the inn. To which
point on Rt. 147 should they walk? (*Hint*: First find the line of reflection if
Berit’s house is reflected onto the inn.)

**19.** Point *A* on a coordinate grid is at (3, 4). What are the coordinates of *Ry* = *x*(*A*)?

**20.** Point *Z* on a coordinate grid is at (–1, 3). What are the coordinates
of *Ry* = –*x*(*Z*)?