① The statement "x is between 13 and 23" defines an interval using two simultaneous inequalities: $13 < x$ *and* $x < 23$. The statement "x is not between 13 and 23" also uses two inequalities, but they are *non*-simultaneous: $x \leq 13$ *or* $23 \leq x$. Graph these two examples on a number line. Notice that there is a compact form $13 < x < 23$ for only one of them.

② Remy walked to a friend's house, m miles away, at an average rate of 4 mph. The m-mile walk home was only at 3 mph. Remy spent 2 hours walking in all. Find the value of m.

③ The sides of a rectangle in the coordinate plane are parallel to the axes. Two of the vertices of the rectangle are $(3, -2)$ and $(-4, -7)$. Find coordinates for the other two vertices. Find the area of the rectangle.

④ The rectangle shown at right has been broken into four smaller rectangles. The areas of three of the smaller rectangles are shown in the diagram. Find the area of the fourth one.

234	312
270	

⑤ . Tickets to a school play cost $2 if bought in advance and $3 at the door. By selling all 400 tickets, $1030 was collected. Let x represent the number of tickets sold at the door.
(a) In terms of x, how many tickets were sold at the door?
(b) In terms of x, how much money was taken in by the tickets sold in advance?
(c) Write and solve an equation to find out how many tickets were sold in advance.

⑥ Chandler was given $75 for a birthday present. This present, along with earnings from a summer job, is being set aside for a mountain bike. The job pays $6 per hour, and the bike costs $345. To be able to buy the bike, how many hours does Chandler need to work?

⑦ . (Continuation) Let h be the number of hours that Chandler works. What quantity is represented by the expression $6h$? What quantity is represented by the expression $6h + 75$?
(a) Graph the solutions to the inequality $6h + 75 \geq 345$ on a number line.
(b) Graph the solutions to the inequality $6h + 75 < 345$ on a number line.
(c) What do the solutions to the inequality $6h + 75 \geq 345$ signify?

⑧ Sandy recently made a 210-mile car trip, starting from home at noon. The graph at right shows how Sandy's distance from home (measured in miles) *depends* on the number of hours after noon. Make up a story that accounts for the four distinct parts of the graph. In particular, identify the speed at which Sandy spent most of the afternoon driving.