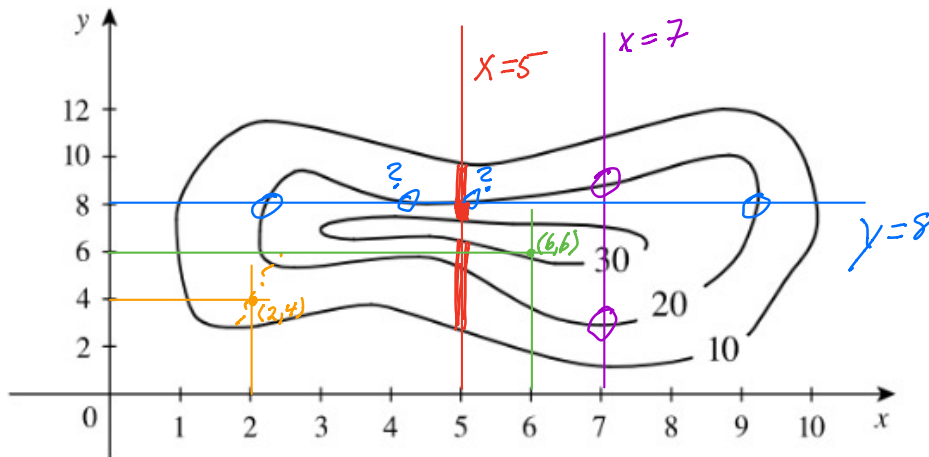


11.1 - Using contour maps

Consider the following contour map of a continuous function $f(x, y)$.



1. For approximately what values of y is it true that $10 \leq f(5, y) \leq 30$?

$$3 < y < 6.5 \text{ and } 7 < y < 10$$

2. What do you estimate $f(2, 4)$ to be, and why?

$$f(2, 4) \approx 14$$

It looks like the point is a little less than halfway from $z=10$ to $z=20$.

3. What do you estimate for $f(6, 6)$? Explain.

Probably a bit more than 30. Certainly less than 40

4. How many values of y satisfy $f(7, y) = 20$? (Hint: Draw a line that includes all the points having coordinates $(7, y)$ where y could be any real number.)

$x=7$ 2 values (2 places where $(7, y)$ crosses $z=20$).

5. How many values of x satisfy $f(x, 8) = 20$?

$\overline{y=8}$
2 values, or perhaps 4