Exercise 82

Simplifying Absolute Value Express the quantity without using absolute value.

$$a + b + |a - b|, \text{ where } a < b$$

Solution

Since $a < b$, $a - b$ is less than zero. The absolute value sign, then, can be removed only if a minus sign is placed in front of the quantity.

$$a + b + |a - b| = a + b + [-(a - b)] = a + b + (b - a) = 2b$$