Math 1331 - Fall 2019

Final Exam Review Problems

1 Additional Review Problems

1. If θ is an angle between $\frac{\pi}{2}$ and π such that $\tan(\theta) = 4$, find $\sin(\theta)$ and $\cos(\theta)$.

2. Give exact values for each of the following quantities.

(a) $\sin\left(\frac{\pi}{3}\right)$

(b) $\cos\left(\frac{\pi}{6}\right)$

3. Figure 1.1 shows the position of Bob's car on his commute to work. The variable t is measured in hours so that $t = 8$ corresponds to 8:00AM. Distance is measured in miles.

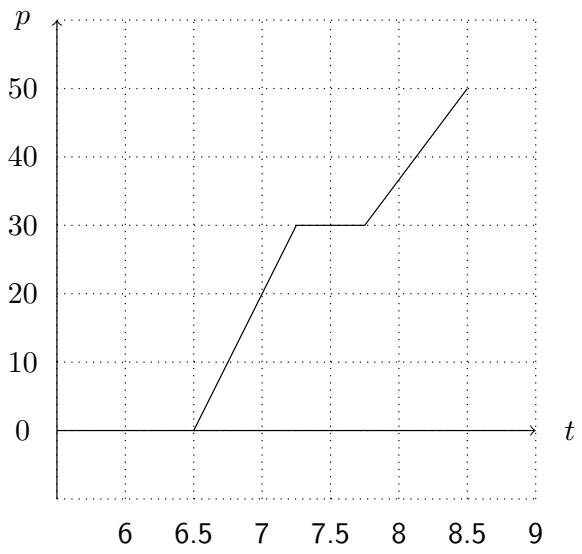

Figure 1.1 A figure generated with TikZ in LaTeX

(a) How far does Bob have to drive in order to get to work?

(b) What was the car's average velocity between 7:00AM and 8:30AM?

(c) What was Bob's instantaneous velocity at 7:30AM?

(d) Was Bob driving faster at 7:00AM or 8:00AM?

(e) If Bob drove to work between 6:30AM and 8:30AM, how could you describe his commute?

4. Table 1.2 shows the values of $f(x)$, $g(x)$, $f'(x)$, and $g'(x)$ for certain values of x. Find the rate of change of each of the following functions when $x = 2$.

(a) $f(g(x))$

(b) $g(f(x))$

(c) $f(x) \cdot g(x)$

(d) $\dfrac{f(x)}{g(x)}$

(e) $f(2x-1)$

Table 1.2 This table shows values of $f(x)$, $g(x)$, $f'(x)$, and $g'(x)$ for certain values of x.

x	$f(x)$	$g(x)$	$f'(x)$	$g'(x)$
1	-3	4	6	5
2	1	3	-2	-1
3	9	3	-7	-6