Name: _____

Date: _____

SHOW ALL WORK

1. Explain the concepts of zero slope and undefined slope and how they are different from each other.

2. Is it possible for two lines with positive slopes to be perpendicular to each other? *Explain your reasoning.*

3. Find the value of k: if the line through the points $(k - 3, k + 2)$ and $(2, 1)$ is parallel to the line through the points $(- 1, 1)$ and $(3, 9)$.

4. Find the value of k: if the line through the points $(2k + 1, -4)$ and $(5, 3 - k)$ is parallel to the line through the points $(-4, -9)$ and $(2, -3)$.

5. Find the value of k: if the line through the points $(10 - k, k)$ and $(k + 4, 5k + 1)$ is perpendicular to the line through the points $(-1.5, -0.5)$ and $(7, 6)$.

6. Find the value of k: if the line through the points $(4k + 3, k + 1)$ and $(k - 6, -2k + 3)$ is perpendicular to the line through the points $(2, 3)$ and $(2, 8)$.

7. For one manufacturer of camping equipment, between 1990 and 2000 annual sales increased by \$7.4 million per year. In 2000, the total sales were \$85.9 million. If sales increase at the same rate, what will be the total sales in 2010?