

**King Fahd University of Petroleum and Minerals**  
**Prep-Year Math Program**  
**Math 001 - Term 131**  
**Recitation (2.4 and 2.5)**

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**Question1.**

For what value(s) of  $k$ , the slope of the linear function  $(k - 1)y = kx + 3$  is Positive?

**Answer:**  $k \in (-\infty, 0) \cup (1, \infty)$

**Question2.**

**(a):** Find the equation of a line with  $x$ -intercept  $\frac{4}{5}$  and perpendicular to the line  $2y = -\frac{2}{3}x + 3$

**(b):** Find the  $x$ -intercept and  $y$ -intercept of the line passing through the points  $(-2, 2)$  and  $(1, -3)$

**Answer: (a):**  $y = 3x - \frac{12}{5}$       **(b):**  $x$ -intercept:  $x = -\frac{5}{4}$  or  $(-\frac{5}{4}, 0)$   
 $y$ -intercept:  $y = -\frac{4}{3}$  or  $(0, -\frac{4}{3})$

**Question3.** Find  $k$  so that the line through  $(4, -1)$  and  $(k, 2)$  is:

- a) Parallel to  $3y + 2x = 6$
- b) Perpendicular to  $y = 1$

**Solution: (a):**  $k = -\frac{1}{2}$       **(b):**  $k = 4$

**Question4:**

The line through the points  $(5, k)$  and  $(2, k + 2)$ , where  $k$  is any real number, is parallel to the line

- (a):**  $3x + 2y = 0$
- (b):**  $2x - 3y = 5$
- (c):**  $y = \frac{2}{3}x + 1$
- (d):**  $4x + 6y = -1$
- (e):**  $8x - 12y = 3$

**Question5:** The  $x$ -intercept and the  $y$ -intercept of the line passing through  $(-2, -1)$  and  $(1, 3)$  are

- a).  $-\frac{7}{2}, -\frac{7}{3}$
- b).  $-\frac{5}{4}, \frac{5}{3}$
- c).  $0, 0$
- d).  $-3, \frac{9}{4}$
- e).  $-2, \frac{4}{3}$