King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math (001)-Term (181)
Recitation (1.3)

Question 1: If $A(-1,2)$, $B(-10,5)$, and $C(-4,k)$ are the vertices of a right triangle, where the right angle is at B, then find the value of k.

Answer: $\boxed{k=23}$

Question 2: Find k so that the line passing through $(-2,-11)$ and $(k,2)$ is perpendicular to the line passing through $(1,1)$ and $(5,-1)$.

Answer: $\boxed{k=\frac{9}{2}}$

Question 3: The equation of the line passing through $(4,1)$ and parallel to $x=5$ is

(a) $x=5$ (b) $y=1$ (c) $x=1$ (d) $x=4$ (e) $4x+y=-5$

Answer: (d) $x=4$

Question 4: The line with x-intercept $\frac{1}{4}$ and y-intercept $-\frac{1}{2}$ intersects the line $y=2$ at the point (p,q). The value of p is

(a): $\frac{5}{4}$ (b): 1 (c): $-\frac{5}{2}$ (d): $\frac{1}{2}$ (e): $\frac{3}{4}$

Answer: (a) $p=\frac{5}{4}$

Question 5 (Textbook Exercise 86): Find an equation for the line tangent to the circle $x^2+y^2=25$ at the point $(3,-4)$

Answer: $3x-4y-25=0$

Question 6: A point that lies on the line that is perpendicular to the line $3y-2x+6=0$ and passes through the point $(2,3)$ is

(a) $(-2,1)$ (b) $(1,5)$ (c) $(4,3)$ (d) $(6,-5)$ (e) $\left(3,\frac{3}{2}\right)$

Answer: e) $\left(3,\frac{3}{2}\right)$ lies on the line $y=-\frac{3}{2}x+6$.