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1. a) Find the value of b if the line $y = \frac{3}{2}x + b$ passes through $(4, 7)$.
b) Find the value of m if the line $y = mx - 3$ passes through $(1, 5)$.
2. Which of the following points lie on the line $2x - 5y + 4 = 0$? Show your work!
a) $(3, 2)$ b) $(7, 4)$ c) $(-5, 1)$ d) $(8, 4)$ e) $(\frac{1}{2}, 1)$
3. Which of the following lines pass through the point $(-3, 4)$?
a) $2x + 3y - 5 = 0$ b) $3x - 2y + 17 = 0$ c) $5x + 2y + 7 = 0$
4. Find the equation in standard form of the line that passes through these points.
a) $(3, 5)$ and $(-5, -3)$ b) $(-4, 7)$ and $(5, -4)$ c) $(2, 10)$ and $(-2, -6)$ d) $(-8, 3)$ and $(6, -5)$
5. Find the equation of the line which passes through $(5, 5)$ that is
a) parallel to the line $3x + 4y = -16$
b) perpendicular to the line $5x + 2y = 10$
6. A triangle has vertices $P(-3, -1)$, $Q(9, 3)$ and $R(3, 7)$. Find the equations of the
a) sides of the triangle
b) line through R , parallel to PQ
c) line through R , perpendicular to PQ
7. Find the x -intercept, the y -intercept, and the slope for each line.
a) $2x - 5y + 10 = 0$ b) $4x + y - 12 = 0$ c) $3x - 7y - 14 = 0$
8. For what value of k are the lines $3kx - 7y - 10 = 0$ and $2x + y - 7 = 0$ parallel? perpendicular?
9. Find the slope of the line segment with these endpoints.
a) $(5, -3)$, $(9, -5)$ b) $(2, 8)$, $(-6, 4)$ c) $(8, -2)$, $(-1, 6)$
d) $(-5, -5)$, $(10, 4)$ e) $(-3, -2)$, $(11, 5)$ f) $(3, 6)$, $(-5, -3)$
10. The endpoints and slope of a line segment are given. Find the value of k .
a) $(3, k)$, $(-2, 4)$, slope = $\frac{2}{5}$ b) $(k, 8)$, $(-6, 4)$, slope = $\frac{-3}{4}$ c) $(5, -2)$, $(-1, k)$, slope = 0
d) $(-3, -k)$, $(1, -4)$, slope = 4 e) $(k, -3)$, $(8, 7)$, slope is undefined

