Chapter 6 TEST

1. Are the following relations linear functions? Justify. [3]
a)

|  |  |
| --- | --- |
| $$x$$ | $$y$$ |
| 2 | 5 |
| 4 | 8 |
| 6 | 11 |
| 10 | 17 |

b) $y=-3x+5$

c) $y=5$

d) $x=2$

e) $y=2x^{2}-3$

f)


1. Match each graph with its slope: [2]
a) \_\_\_ b) \_\_\_ c) \_\_\_
  

d) \_\_\_ e) \_\_\_ f) \_\_\_
  

A: $-2$ B: $\frac{1}{2}$ C: $2$ D: $-\frac{1}{2}$ E: $0$ F: undefined
2. Determine if the following lines are parallel, perpendicular or neither. [2]

|  |  |  |  |
| --- | --- | --- | --- |
| Equations | $$y=-2x+3$$ | $$y=2x-3$$ | $$y=\frac{1}{2}x+3$$ |
| $$y=-\frac{1}{2}x+3$$ |  |  |  |
| $$y=\frac{1}{2}x-3$$ |  |  |  |
| $$y=-2x-3$$ |  |  |  |

1. Let $A(4,3)$, $B(10,2)$, $C(11,7)$ and $D(5,8)$. [2]
2. Is ABCD a parallelogram?
3. Is it a rectangle?
4. Rewrite the following equations in slope-intercept forms: [2]
a) $2x-3y+5=0$ b) $y+2=-\frac{1}{3}(x-4)$
5. Rewrite the following equations in general forms: [2]
a) $y-2=\frac{2}{7}(x+14)$ b) $y=-\frac{1}{3}x-4$
6. Determine an equation for each line graphed below: [2]


7. Determine the *y*-intercepts of the following functions: [2]
a) $y=-3x+5$ b) $y+1=\frac{1}{5}(x-3)$ c) $2x-3y+5=0$
8. Graph the following functions (show at least 2 exact points): [3]
a) $y=-\frac{4}{5}x+3$ b) $y+4=\frac{2}{7}(x-3)$ c) $3x-4y=-12$


9. a) Determine an equation of a line going through the origin and perpendicular to the line with equation $y=\frac{1}{3}x+4$. [1]

b) Determine an equation in slope-intercept form of a line through $A(5,-4)$ and parallel to the line with equation $y=\frac{1}{4}x-1$. [2]
10. Julian wants to order t-shirts online. The shipping fee is $25 per order and each t-shirt costs $31.50. Present your work clearly for each question. [3]
11. Determine an equation to represent the price paid, P, as a function of the number of t-shirts ordered, n.
12. How much will Julian pay if he orders 5 t-shirts?
13. Julian received a bill for $277. How many t-shirts did he order?