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| The following are linear functions | The following are nonlinear functions |
|   |   |
| $m\left(x\right)=2$  | $$f\left(x\right)=x^{2}$$ |
| $$m\left(x\right)=2x-7$$ | $f\left(x\right)=x^{-1}$  |
| $m\left(x\right)=$ $\frac{1}{3}x-2$ | $k\left(x\right)=x^{2}+1$  |

What makes a function linear? What makes a function nonlinear?

Using your definitions, place the following into the proper column.

1. $a\left(x\right)=x^{3}-5$
2. $b\left(x\right)=2x^{2}+1$
3. $b\left(x\right)=x^{-1}+1$
4. $c\left(x\right)=x^{2}+12$
5. $c\left(x\right)=\frac{1}{4}x-2$
6. $d\left(x\right)=-3x^{2}+1$
7. $e\left(x\right)=-4x^{2}-1$
8. $f\left(x\right)=\frac{1}{5}x-2$
9. $m\left(x\right)=x^{-1}-1$
10. $m\left(x\right)=\frac{6}{x}-1$
11. $m\left(x\right)=x^{3}+1$
12. $m\left(x\right)=\frac{1}{6}x-2$
13. $r\left(x\right)=x^{3}-11$
14. $s\left(x\right)=x-10$