

Pre-Calculus

KEY

Describe the graphical transformation(s) of a logarithmic function from its mother function.

1. vertical stretch of 3
horizontal shift left 5
vertical shift down 6
2. vertical reflection
horizontal stretch of 3
vertical shift up 7
3. vertical reflection
vertical stretch of 2
horizontal shift right 7
vertical shift up 12
4. vertical reflection
horizontal reflection
vertical shift up 3
5. vertical stretch of 5
horizontal shift right 9
vertical shift down 15
6. horizontal shift left 3
vertical shift down 11
7. vertical reflection
vertical stretch of 2
horizontal reflection
vertical shift up 19
8. vertical stretch of 5
horizontal shift left 8
vertical shift up 23
9. vertical stretch of $\frac{1}{2}$
horizontal stretch of 5
vertical shift down 17
10. vertical reflection
vertical stretch of $\frac{1}{3}$
horizontal shift right 11
vertical shift up 13