Check it Out

- If you have any difficulty with these solutions, please contact your teacher before continuing.

1.

Parameter a	Equation	Graph	y-intercept
2	$y = 2(1.5)^x$		2
0.5	$y = 0.5(1.5)^x$		0.5
0.25	$y = 0.25(1.5)^x$		0.25

2. As the value of a decreases, the point where the graph crosses the y-axis decreases.

3. The a-value of the equation equals the y-intercept of the graph.

4. The shape of the function is concave up.

5. The a-value affects how quickly the graph increases vertically. As the a-value increases, the curve of the graph becomes steeper.

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6.   The graph extends from Quadrant II to Quadrant I. As the *x*-values decrease, the graph tends towards the *x*-axis. As the *x*-values increase, the graph tends towards positive infinity.

7.   The *a*-value does not affect the end behaviour of the graph.

8.

Parameter *a*	Equation	Graph	*y*-intercept
2	$y = 1.5(2)^x$		1.5
0.5	$y = 1.5(0.5)^x$		1.5
0.25	$y = 1.5(0.25)^x$		1.5

9.   As the value of *b* decreases, the graph changes from increasing to decreasing.

10. The *b*-value does not relate to the *y*-intercept of the graph.

11. The shape of the function is concave up.

12. The *b*-value changes the direction the curve is facing. It remains concave up, but it opens to the left if $b > 1$ and it opens to the right if $0 < b < 1$.

13. For $b > 1$, the graph is increasing. Therefore, as the *x*-values decrease, the graph tends towards the *x*-axis, and as the *x*-values increase, the graph tends towards positive infinity.

    For $0 < b < 1$, the graph is decreasing. Therefore, as the *x*-values decrease, the graph tends towards positive infinity, and as the *x*-values increase, the graph tends towards the *x*-axis.

14. The graph changes whether the graph rises (increasing) or falls (decreasing) from Quadrant II to Quadrant I.