

Name _____

Date _____

Transformations of Functions: your summary

1 Fill in every blank from memory. No notes.

2 Check it against the Unit Summary in a different colour.

3 Tick ✓ or X on each card. Every X is a topic to review.

vertexmath.ca
Worksheet, answers &
this cheat sheet



Inside or outside?

Write the tool for each case.

$5f(x), f(x) - 2$

$f(5x), f(x - 2)$

$-f(x), f(-x)$

1 Translations



1 Describe $y = (x - 6)^2 + 11$ and give its vertex.

2 Write the mapping rule for $y = f(x + 8) - 1$.

2 Reflections



3 Reflect $(6, -11)$ in the y -axis, then in the x -axis.

4 Is $g(x) = x^4 - 3x^2$ even, odd or neither?

3 Stretches



5 Image of $(12, -3)$ under $y = 7f(4x)$.

6 Which points stay fixed under $y = f(3x)$?

4 Combined: the mapping rule



7 Write the mapping rule for $y = -0.5f[3(x + 1)] - 2$.

8 Image of $(9, 4)$ under $y = 2f(3x - 3) + 1$.

5 Domain and range



9 f has range $[-1, 9]$. Find the range of $y = -2f(x) + 3$.

6 Reading an equation



10 List the transformations in $y = 4f(-x + 8) + 1$.

7 Equation from a graph



11 A parabola has vertex $(-1, 6)$ and passes through $(1, -2)$. Find its equation.

My traps Your three most likely mistakes, and how you will catch each one.

1 _____ **2** _____ **3** _____

9 $[-15, 5]$ **10** $4f[-(x - 8)] + 1$: stretch 4, reflect in the y -axis, right 8, up 1 **11** $-2 = a(2)^2 + 6, a = -2$: $y = -2(x + 1)^2 + 6$

5 $(3, -21)$ **6** Points on the y -axis ($x = 0$) **7** $(x, y) \rightarrow (x/3 - 1, -0.5y - 2)$ **8** $f[3(x - 1)]: (9/3 + 1, 2(4) + 1) = (4, 9)$

1 Right 6, up 11; vertex $(6, 11)$ **2** $(x, y) \rightarrow (x - 8, y - 1)$ **3** $(-6, -11)$, then $(-6, 11)$ **4** Even: $g(-x) = g(x)$

Answers to the numbered prompts. Cover this strip until you are done.