



Transform Me

► **Materials:**

- 6-sided die
- Transformation cards
- Timer
- Pencil
- Paper
- Answer sheet

► **Directions:**

Students play in teams of three. Each team needs one answer sheet.

1. One student or the teacher rolls the die to determine how many transformation cards to draw this round.
2. The transformation cards are shuffled. Each team then draws the specified number of transformation cards.
3. One student or the teacher starts the timer.
4. Starting with the parent function $y = x^2$, teams then use their transformation cards to write a new transformed function.
5. Students write the transformations in order and the standard form of the final transformed function on the answer sheet.
6. One member looks at the timer and records the time on the answer sheet.
7. Repeat steps 1–6 until time is called.
8. Teams exchange answer sheets to verify the transformed functions. If the transformed function is correct, a checkmark (✓) is written on the team's score chart. If the transformed function is incorrect, an X (✗) is written on the team's score chart.
9. Teams add their times for each round. Then, they subtract five seconds for each checkmark and add 30 seconds for each X. This answer is the final score.

▶ **Who Wins?**

The team with the lowest final score wins.

▶ **Tip:**

The timer should be large and visible for all students.

▶ **Discuss:**

Discuss whether the order of the transformations matters. When does it matter?
When doesn't it matter?

▶ **Variation:**

The game can be played with other types of parent functions.

Transformation cards for Transform Me

translation 1 unit left	translation 2 units left	translation 3 units left
translation 4 units left	translation 5 units left	translation 6 units left
translation 7 units left	translation 8 units left	translation 9 units left
translation 1 unit right	translation 2 units right	translation 3 units right
translation 4 units right	translation 5 units right	translation 6 units right
translation 7 units right	translation 8 units right	translation 9 units right

translation 1 unit up

translation 2 units up

translation 3 units up

translation 4 units up

translation 5 units up

translation 6 units up

translation 7 units up

translation 8 units up

translation 9 units up

translation 1 unit down

translation 2 units down

translation 3 units down

translation 4 units down

translation 5 units down

translation 6 units down

translation 7 units down

translation 8 units down

translation 9 units down

vertical stretch
by a factor of 2

vertical stretch
by a factor of 3

vertical stretch
by a factor of 4

vertical stretch
by a factor of 5

horizontal stretch
by a factor of 2

horizontal stretch
by a factor of 3

horizontal stretch
by a factor of 4

horizontal stretch
by a factor of 5

vertical shrink
by a factor of $\frac{1}{2}$

vertical shrink
by a factor of $\frac{1}{3}$

vertical shrink
by a factor of $\frac{1}{4}$

vertical shrink
by a factor of $\frac{1}{5}$

horizontal shrink
by a factor of $\frac{1}{2}$

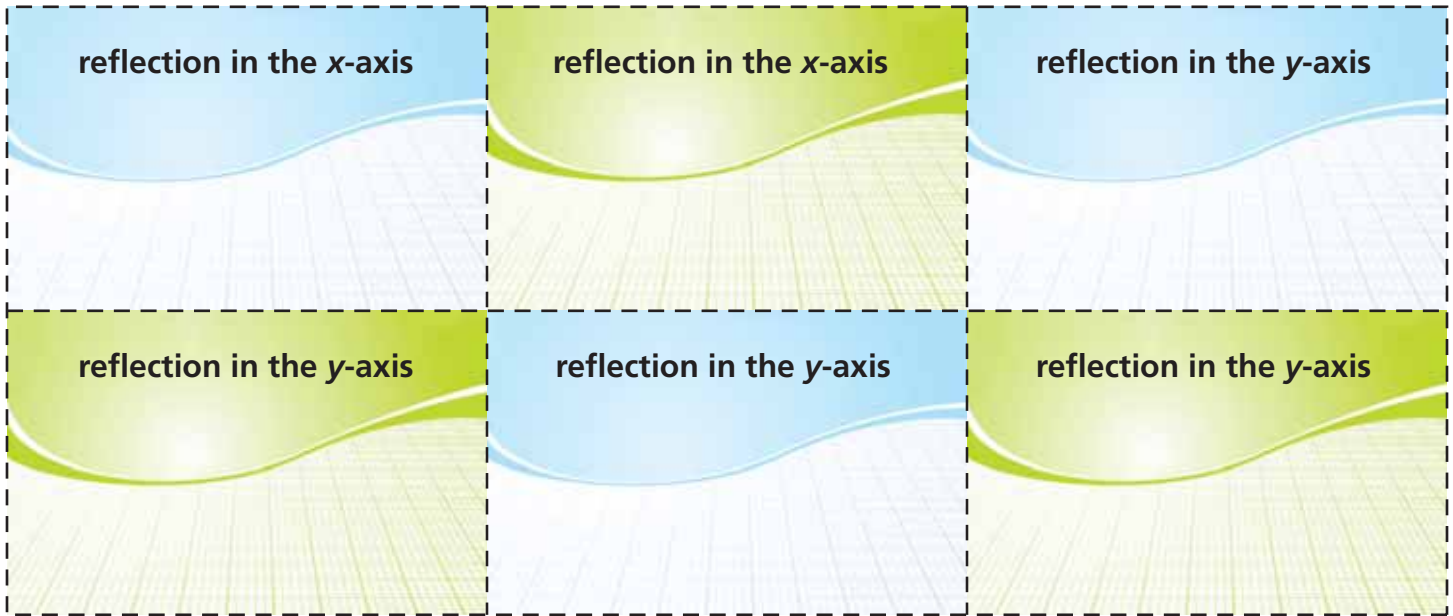
horizontal shrink
by a factor of $\frac{1}{3}$

horizontal shrink
by a factor of $\frac{1}{4}$

horizontal shrink
by a factor of $\frac{1}{5}$

reflection in the x-axis

reflection in the x-axis



Answer sheet for Transform Me

Transformations	Transformed Function	Time (in seconds)	☑ or ☒