YOU & MATHS The following is not an isometry:

A a rotation.
C a translation.
B a reflection.
D a dilation.

(USA *Northern State University: 52nd Annual Mathematics Contest,* 2005)

Since an isometry is a distance-preserving transformation, it is easy to see that:

- a rotation is an isometry, as the geometrical shape that is rotated is congruent to the original one;
- a reflection is an isometry, because the geometrical shape that is reflected is congruent to the original one;
- a translation is an isometry, since the geometrical shape that is translated is congruent to the original one;
- a dilation is not an isometry, because the geometrical shape that is dilated can change in size.

Our final answer is D.