|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Rotations** | |  | | |
| 1 | Rotate this shape 900 clockwise around the point **P**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  | P |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | | 4 | Rotate this shape by 900 clockwise through the origin.  ***y***   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  | ***5*** |  |  |  |  |  |  | |  |  |  |  |  | ***4*** |  |  |  |  |  |  | |  |  |  |  |  | ***3*** |  |  |  |  |  |  | |  |  |  |  |  | ***2*** |  |  |  |  |  |  | |  |  |  |  |  | ***1*** |  |  |  |  |  |  | | ***-5***  ***-4*** |  | ***-3*** | ***-2*** | ***-1*** | ***0*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** | ***x*** | |  |  |  |  | ***-1*** |  |  |  |  |  |  |  | |  |  |  |  | ***-2*** |  |  |  |  |  |  |  | |  |  |  |  | ***-3*** |  |  |  |  |  |  |  | |  |  |  |  | ***-4*** |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2 | Rotate this shape 1800 around the point **P**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  | P |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | | 5 | Rotate this shape by 1800 through the centre (-1, -2)  ***y***   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  | ***5*** |  |  |  |  |  |  | |  |  |  |  |  | ***4*** |  |  |  |  |  |  | |  |  |  |  |  | ***3*** |  |  |  |  |  |  | |  |  |  |  |  | ***2*** |  |  |  |  |  |  | |  |  |  |  |  | ***1*** |  |  |  |  |  |  | | ***-5***  ***-4*** |  | ***-3*** | ***-2*** | ***-1*** | ***0*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** | ***x*** | |  |  |  |  | ***-1*** |  |  |  |  |  |  |  | |  |  |  |  | ***-2*** |  |  |  |  |  |  |  | |  |  |  |  | ***-3*** |  |  |  |  |  |  |  | |  |  |  |  | ***-4*** |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |
| 3 | Rotate this shape 900 anti-clockwise around the point **P**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  | P |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | | 6 | Describe the transformation that maps shape A to shape B  ***y***   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  | ***5*** |  |  |  |  |  |  | |  |  |  |  |  | ***4*** |  |  |  |  |  |  | |  |  |  |  |  | ***3*** |  |  |  |  |  |  | |  |  |  |  |  | ***2*** |  |  | B |  |  |  | |  |  |  |  |  | ***1*** |  |  |  |  |  |  | | ***-5***  ***-4*** |  | ***-3*** | ***-2*** | ***-1*** | ***0*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** | ***x*** | |  |  |  |  | ***-1*** |  |  |  |  |  |  |  | |  |  |  |  | ***-2*** |  |  |  | A |  |  |  | |  |  |  |  | ***-3*** |  |  |  |  |  |  |  | |  |  |  |  | ***-4*** |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |