

**G.G.54: Translations 2: Define, investigate, justify, and apply isometries in the plane (rotations, reflections, translations, glide reflections)**

- 1 The transformation  $T_{(-2,3)}$  maps the point  $(7,2)$  onto the point whose coordinates are  
1)  $(9,5)$  2)  $(5,5)$  3)  $(5,-1)$  4)  $(-14,6)$
- 2 The image of  $A(-1,3)$  under the translation  $T_{2,1}$  is  
1)  $(1,4)$  2)  $(-3,2)$  3)  $(-2,3)$  4)  $(0,5)$
- 3 What is the image of point  $(2,4)$  under the translation  $T_{-6,1}$ ?  
1)  $(-4,3)$  2)  $(-4,5)$  3)  $(8,3)$  4)  $(8,5)$
- 4 If translation  $T$  maps point  $(-3,1)$  onto point  $A'(5,5)$ , which is translation  $T$ ?  
1)  $T_{2,4}$  2)  $T_{2,6}$  3)  $T_{8,6}$  4)  $T_{8,4}$
- 5 What is the image of  $(-2,3)$  after the transformation  $T_{(3,-1)}$ ?
- 6 What is the image of the point  $(3,-4)$  under the translation  $T_{(-2,0)}$ ?
- 7 Find the coordinates of the image of  $(-3,4)$  under the transformation  $T_{-2,3}$ .
- 8 Find the coordinates of  $P'$ , the image of  $P(-3,4)$  under the translation  $T_{4,1}$ .
- 9 If the transformation  $T_{(x,y)}$  maps point  $A(1,-3)$  onto point  $A'(-4,8)$ , what is the value of  $x$ ?
- 10 Translation  $T$  maps point  $(2,6)$  to point  $(4,-1)$ . What is the image of point  $(-1,3)$  under translation  $T$ ?
- 11 A translation maps  $P(3,-2)$  to  $P'(1,1)$ . Under the same translation, find the coordinates of  $Q'$ , the image of  $Q(-3,2)$ .
- 12 A translation maps  $P(4,1)$  to  $P'(2,-1)$ . What are the coordinates of  $Q'$ , the image of  $Q(1,3)$  under the same translation?
- 13 A translation maps  $P(4,-3)$  onto  $P'(0,0)$ . Find the coordinates of  $Q'$ , the image of  $Q(-2,1)$  under the same translation.
- 14 A translation maps the origin to the point  $(5,-3)$ . What is the image of the point  $(-3,2)$  under the same translation?
- 15 Under a given translation, the origin maps onto the point  $(3,5)$ . What is the image of the point  $(7,-1)$  under this same translation?
- 16 A translation maps the point  $(5,-2)$  to a point  $(0,-2)$ . What is the image of point  $(0,-2)$  under the same translation?
- 17 A translation maps  $(2,1)$  onto  $(-3,2)$ . Find the image of  $(4,-1)$  under the same translation.
- 18 A translation maps  $P(3,-2)$  onto  $P'(5,0)$ . Find the coordinates of the image of  $Q(4,-6)$  under the same translation.
- 19 A translation maps  $A(-2,1)$  onto  $A'(2,2)$ . Find the coordinates of  $B'$ , the image of  $B(-4,-5)$ , under the same translation.

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**Answer Section**

- 1 ANS: 2 REF: 019019siii  
 2 ANS: 1 REF: 069418siii  
 3 ANS: 2 REF: 060116siii  
 4 ANS: 4 REF: 068621siii  
 5 ANS:  
 (1,2)

REF: 018502siii

- 6 ANS:  
 (1,-4)

REF: 068501siii

- 7 ANS:  
 (-5,7)

REF: 019603siii

- 8 ANS:  
 (1,5)

REF: 010308siii

- 9 ANS:  
 -5

REF: 089605siii

- 10 ANS:  
 (1,-4)

REF: 019902siii

- 11 ANS:  
 (-5,5)

REF: 060007siii

- 12 ANS:  
 (-1,1)

REF: 060202siii

- 13 ANS:  
 (-6,4)

REF: 068012siii

- 14 ANS:  
 (2,-1)

REF: 088507siii

15 ANS:  
(10,4)

REF: 088605siii

16 ANS:  
(-5,-2)

REF: 068802siii

17 ANS:  
(-1,0)

REF: 018902siii

18 ANS:  
(6,-4)

REF: 068902siii

19 ANS:  
(0,-4)

REF: 089015siii