

Chapter 4 Test Prep

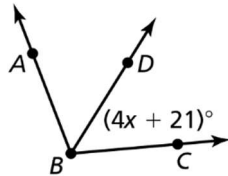
1. Select all transformations that do not result in mapping $(a, -a)$ to (a, a) when $a > 0$.

- (A) reflection in the y -axis
 (B) reflection in the x -axis
 (C) translation $2a$ units up
 (D) translation a units up, followed by a reflection in the line $y = a$
 (E) translation a units up, followed by a reflection in the line $y = \frac{a}{2}$

2. What is the next number in the sequence $-3, -2, 1, 6, 13, \dots$?

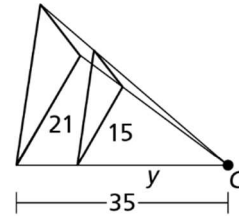
3. $\overline{BD}$ bisects $\angle ABC$. If $m\angle ABC = (6x + 58)^\circ$, find $m\angle ABD$.

- (A) 8°
 (B) 16°
 (C) 53°
 (D) 106°



4. Use the dilation to find the value of y .

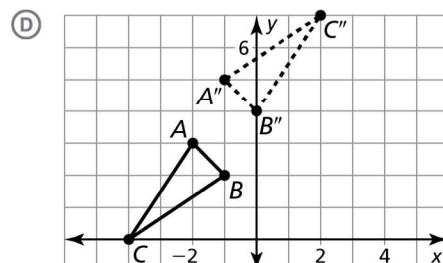
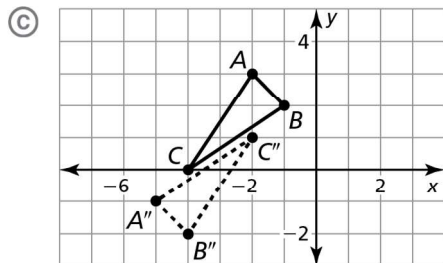
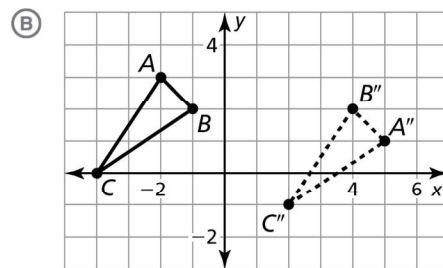
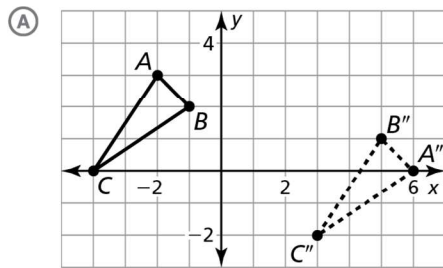
- (A) 1.4
 (B) 49
 (C) 5
 (D) 25



5. Which graph shows the image of $\triangle ABC$ after the glide reflection?

Translation: $(x, y) \rightarrow (x + 2, y + 3)$

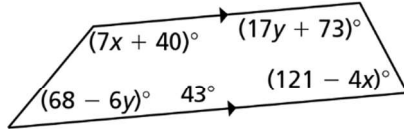
Reflection: in the line $y = x$



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6. What is the value of the expression $y - x$?



$y - x =$

-	-	-	-	-	-	-
/	/	/	/	/	/	/
.	.	.	.	.	.	.
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

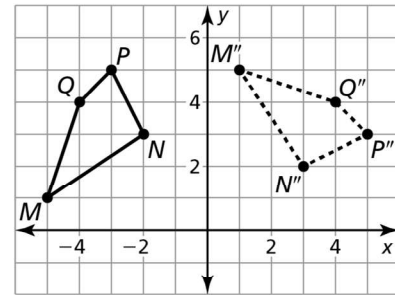
7. The vector $\langle 2, 6 \rangle$ describes the translation of $M(3, 2w)$ to $M'(4x - 2, 7)$ and $N(5y - 8, 9)$ to $N'\left(0, \frac{3}{2}z\right)$. What is the sum of $w, x, y,$ and z ?

$w + x + y + z =$

-	-	-	-	-	-	-
/	/	/	/	/	/	/
.	.	.	.	.	.	.
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

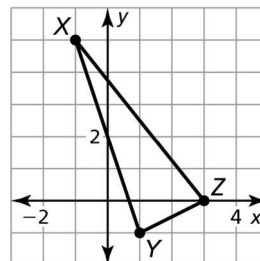
8. Which of the following is a congruence transformation that maps the preimage to the image?

- (A) reflection in the x -axis, followed by a rotation of 180° about the origin
- (B) reflection in the line $y = x$, followed by a reflection in the x -axis
- (C) rotation of 270° about the origin, followed by a reflection in the y -axis
- (D) reflection in the line $y = -x$, followed by a rotation of 180° about the origin



9. What are the vertices of the image of $\triangle XYZ$ after a reflection in the line $y = -x$, followed by a rotation of 270° about the origin?

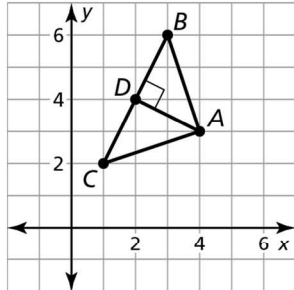
- (A) $X''(-1, -5), Y''(1, 1), Z''(3, 0)$
- (B) $X''(-1, 5), Y''(1, -1), Z''(3, 0)$
- (C) $X''(1, 5), Y''(-1, -1), Z''(-3, 0)$
- (D) $X''(1, -5), Y''(-1, 1), Z''(-3, 0)$



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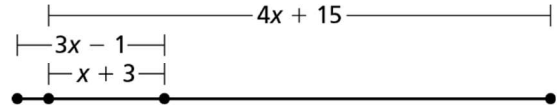
Test Prep (continued)

10. What is the area of the triangle?



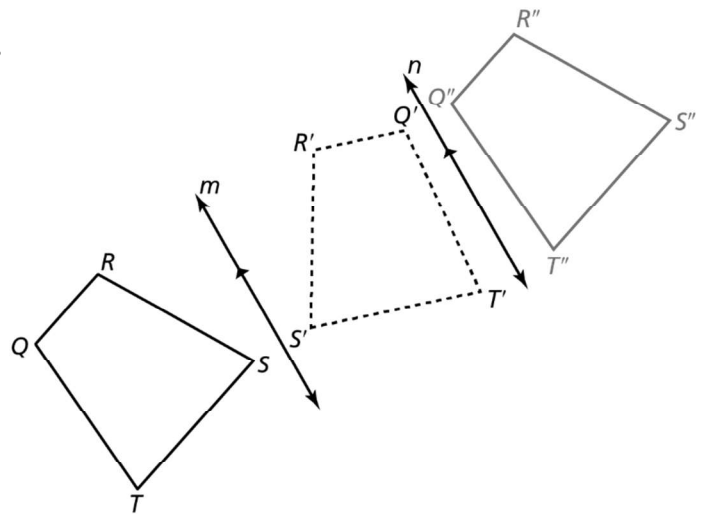
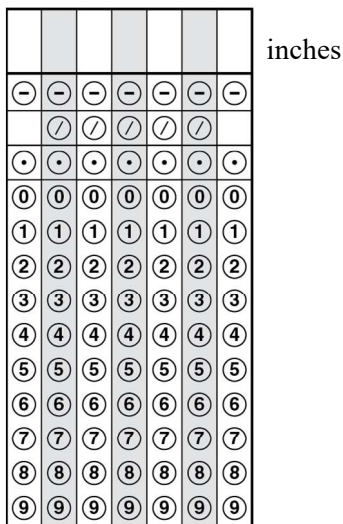
- (A) $\frac{\sqrt{5}}{2}$ square units
 (B) $\sqrt{5}$ square units
 (C) 5 square units
 (D) 10 square units

11. $AD = 29$. What is BC ?

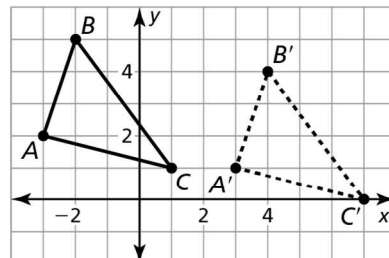


- (A) 3 (B) 6
 (C) 8 (D) 21

12. If the distance between m and n is 3.8 inches, what is the length of $\overline{RR''}$?



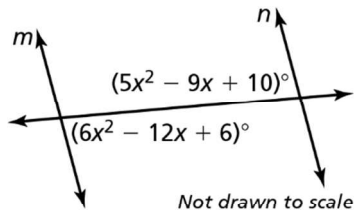
13. Write a rule for the translation of $\triangle ABC$ to $\triangle A'B'C'$.



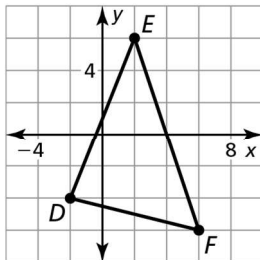
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Test Prep (continued)

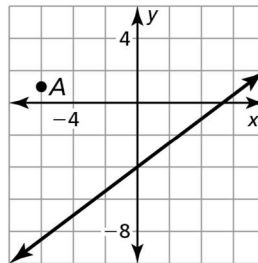
14. What are the values of x that make $m \parallel n$? 15. Which of the following statements can you conclude from the diagram?



- (A) $x = -1$ and $x = 4$
 (B) $x = -3$ and $x = 5$
 (C) $x = 24$ and $x = 54$
 (D) $x = 82$ and $x = 90$
16. What are the vertices of the image of $\triangle DEF$ after a dilation with scale factor 2, followed by a translation 2 units left and 4 units up?



- (A) $D''(-3, 2), E''(-1, 7), F''(1, 1)$
 (B) $D''(-6, -4), E''(2, 16), F''(10, -8)$
 (C) $D''(-2, 0), E''(0, 5), F''(2, -1)$
 (D) $D''(-8, 0), E''(0, 20), F''(8, -4)$
17. What is the distance from $A(-6, 1)$ to the line $3x - 4y = 16$?



- (A) 0.5 unit
 (B) 7.6 units
 (C) 27.1 units
 (D) 57.8 units
18. Select all of the transformations that are equivalent to a rotation of 90° about the origin.

- (A) 270° clockwise about the origin
 (B) 90° clockwise about the origin
 (C) reflection in the line $y = -x$, followed by a reflection in the x -axis
 (D) reflection in the line $y = x$, followed by a reflection in the y -axis
 (E) reflection in the line $y = x$, followed by a reflection in the line $y = -x$