PROFICIENCY CHALLENGE 13 ANSWER KEY

1	a	
	b	

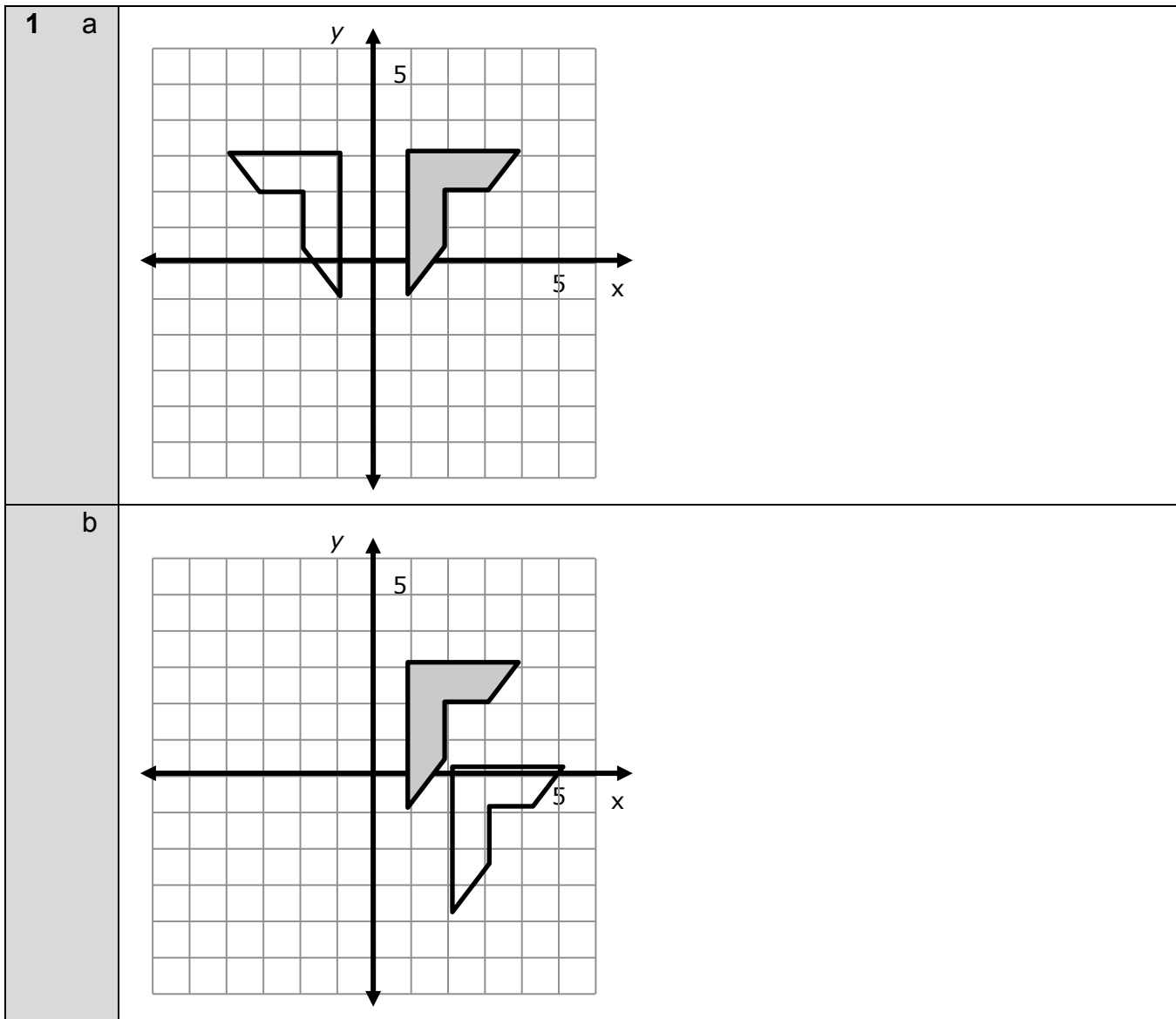|	
2	The length of segment $\overline{A'B'}$ is 10 units. The length of the transformed segment does not change from the original because all the transformations taken preserve length.

3	$y = (1/2)x + 4$ $y = (1/3)x - 3$

PROFICIENCY CHALLENGE 14 ANSWER KEY

AMV = "Answers May Vary"

1	a	Answers may vary slightly. The triangle is reflected across the *x*-axis and then dilated by a scale factor of ½ with the center of the dilation at *F*.
	b	No. Explanations may vary. As an example: Dilations do not preserve congruence.
	c	Yes. Explanations may vary. As an example: Reflections and dilations preserve similarity.

2	AMV

3	The shorter side is 1. The longer side is 5.

4	The triangle is a 12-16-20. Explanations and sketches may vary.

PROFICIENCY CHALLENGE 15 ANSWER KEY

1	The larger pizza is the best choice. Explanations may vary.

2	h = 24 inches

3	a	The sequences of transformations must only involve translations, rotations, and reflections. Dilations do not preserve congruence. Sketches may vary.
	b	All of the transformations preserve similarity. Answers and sketches may vary.

4	Students are guided through a proof of the Pythagorean theorem.

PROFICIENCY CHALLENGE 16 ANSWER KEY

1	Juan's method is not correct. Explanations may vary.

2	Numbers that are only perfect squares	Numbers that are only perfect cubes	Numbers that are both perfect squares and perfect cubes	Numbers that are neither perfect cubes nor perfect squares.
	4	-64, -8, 8, 27, 125	1, 64	50, 300

3	500 times

4	a	1/4
	b	25/99
	c	1

5	$\sqrt{2}$ is an irrational and a real number.
	$\sqrt{\dfrac{1}{4}}$ is equivalent to 1/2 and is a rational and real number.
	13 is an integer, rational, prime, and real number.
	14 is an integer, rational, composite, and real number.

6	Check student number lines for accuracy.