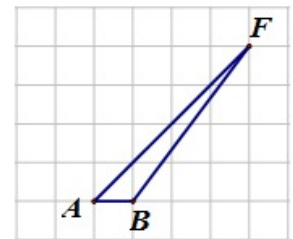
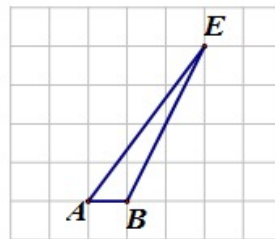
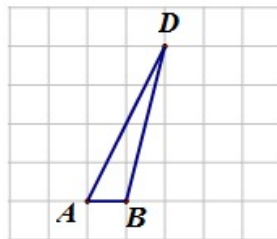
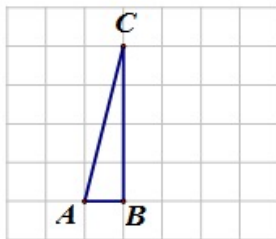


6.G Same Base and Height, Variation 2

Alignments to Content Standards: 6.G.A.1

Task

Which of the triangles, $\triangle ABC$, $\triangle ABD$, $\triangle ABE$ or $\triangle ABF$, has the largest area?



- $\triangle ABC$
- $\triangle ABD$
- $\triangle ABE$
- $\triangle ABF$
- They all have the same area
- There is not enough information to answer.

IM Commentary

This is the second version of a task asking students to find the areas of triangles that have the same base and height. This presentation is more abstract as students are not using physical models. They still determine the area of each triangle by counting the square units or using the “surround and subtract” method, but it is a good lead-up for students to think about the formula for the area of a triangle and notice that the length of bases and altitudes are the same. Students who do not analyze the area may think that $\triangle ABC$ has the largest area because the others appear thinner.

[Edit this solution](#)

Solution

- The first triangle has half the area of a 1 unit by 4 unit rectangle, so the area is 2 square units.
- The area of the second triangle is part of a rectangle that is a 2 unit by 4 unit rectangle with an area of 8 square units. The other two regions are two right triangles. Each of these has an area that is half a rectangle; the area of one is 4 square units and the other is 2 square units. Subtracting, we see that the area is $8 - 4 - 2 = 2$ square units.
- The area of the third triangle is part of a rectangle that is a 3 unit by 4 unit rectangle with an area of 12 square units. The other two regions are two right triangles. Each of these has an area that is half a rectangle; the area of one is 6 square units and the other is 4 square units. Subtracting, we see that the area is $12 - 6 - 4 = 2$ square units.
- The area of the fourth triangle is part of a rectangle that is a 4 unit by 4 unit rectangle with an area of 16 square units. The other two regions are two right triangles. Each of these has an area that is half a rectangle; the area of one is 8 square units and the other is 6 square units. Subtracting, we see that the area is $16 - 8 - 6 = 2$ square units.

So the answer is (e) because all the triangles ave the same area.



6.G Same Base and Height, Variation 2

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