

6.4 Midsegment of a Triangle CYU

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

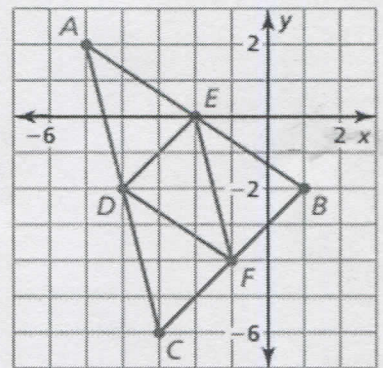
N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Midpoint Formula	1		
Slope Formula	2		
Distance Formula	2		14
Properties of a Midsegment of a Triangle	3 - 10	11, 12	13

Use the graph provided of $\triangle ABC$ with midsegments \overline{DE} , \overline{EF} , & \overline{DF} .

1. Find the coordinates of D, E, and F.

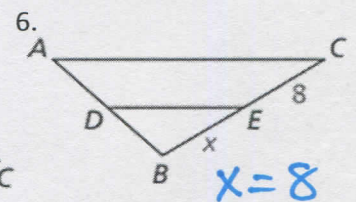
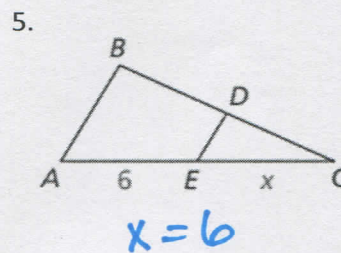
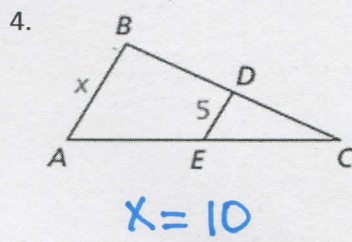
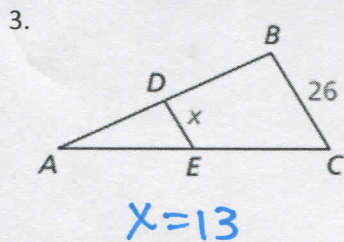
$D(-4, -2)$
 $E(-2, 0)$
 $F(-1, -4)$



2. Show that \overline{DE} is parallel to \overline{CB} and that $DE = \frac{1}{2} CB$.

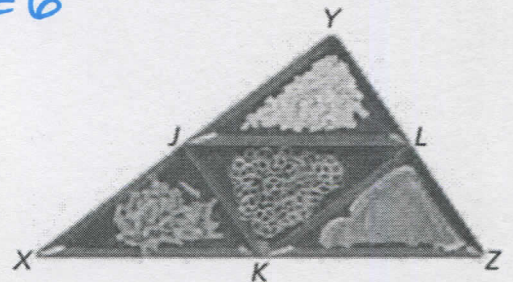
$m = 1$
 $DE = 2\sqrt{2}$
 $CB = 4\sqrt{2}$
 $DE = \frac{1}{2} CB \ \& \ DE \parallel CB$

\overline{DE} is a midsegment of $\triangle ABC$. Find the value of x.



$\overline{XJ} \cong \overline{JY}$, $\overline{YL} \cong \overline{LZ}$, & $\overline{XK} \cong \overline{KZ}$. Complete the statement.

7. $\overline{JK} \parallel \overline{YZ}$ 8. $\overline{JL} \parallel \overline{XZ}$
 9. $\overline{JY} \cong \overline{JX} \cong \overline{KL}$ 10. $\overline{KJ} \cong \overline{YL} \cong \overline{LZ}$



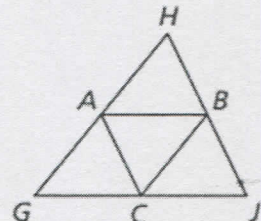
Use $\triangle GHJ$, where A, B, & C are midpoints of the sides.

11. When $AB = 3x + 8$ & $GJ = 2x + 24$, what is AB?

$AB = 14$

12. When $GH = 7z - 1$ & $CB = 4z - 3$, what is GA?

$GA = 17$



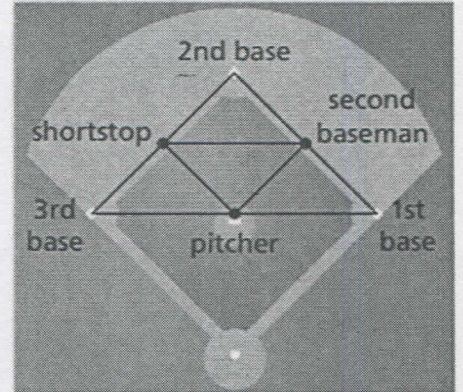
13. **ERROR ANALYSIS** Describe and correct the error.

$\overline{DE} \not\parallel \overline{BC}$
 \overline{DE} not a midsegment.
 D & E are not midpoints

$DE = \frac{1}{2}BC$, so by the Triangle Midsegment Theorem (Thm. 6.8), $\overline{AD} \cong \overline{DB}$ and $\overline{AE} \cong \overline{EC}$.

14. **MODELING WITH MATHEMATICS** The distance between consecutive bases on a baseball field is 90 feet. A second baseman stands halfway between first base and second base, a shortstop stands halfway between second base and third base, and a pitcher stands halfway between first base and third base. Find the distance between the shortstop and the pitcher.

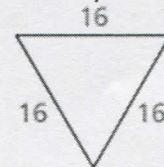
45 ft



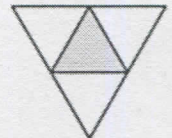
15. **ABSTRACT REASONING** To create the design shown, shade the triangle formed by the three midsegments of the triangle. Then repeat the process for each unshaded triangle.

a) What is the perimeter of the shaded triangle in Stage 1?

$\approx 24u$



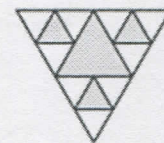
Stage 0



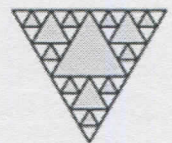
Stage 1

b) What is the total perimeter of all the shaded triangles in Stage 2?

60u



Stage 2



Stage 3

c) What is the total perimeter of all the shaded triangles in Stage 3?

114u

CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

1 2 3 4 5 6 7 8
 Basic Intermediate Advanced Solved ALL!