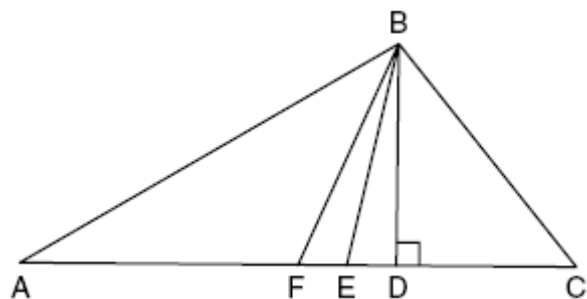


NAME: _____

1. fall0810ge, P.I. G.G.24

Given $\triangle ABC$ with base \overline{AFEDC} , median \overline{BF} , altitude \overline{BD} , and \overline{BE} bisects $\angle ABC$, which conclusion is valid?



- [A] $\angle ABF \cong \angle CBD$ [B] $\overline{CE} \cong \overline{EA}$
 [C] $\angle FAB \cong \angle ABF$ [D] $\overline{CF} \cong \overline{FA}$

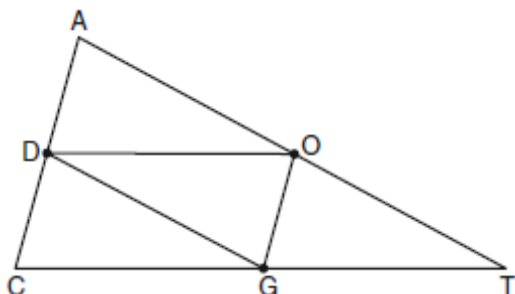
2. 080608b, P.I. G.G.24

In $\triangle ABC$, D is a point on \overline{AC} such that \overline{BD} is a median. Which statement must be true?

- [A] $\overline{BD} \perp \overline{AC}$ [B] $\triangle ABD \cong \triangle CBD$
 [C] $\angle ABD \cong \angle CBD$ [D] $\overline{AD} \cong \overline{CD}$

3. 080920ge, P.I. G.G.42

In the diagram below of $\triangle ACT$, D is the midpoint of \overline{AC} , O is the midpoint of \overline{AT} , and G is the midpoint of \overline{CT} .

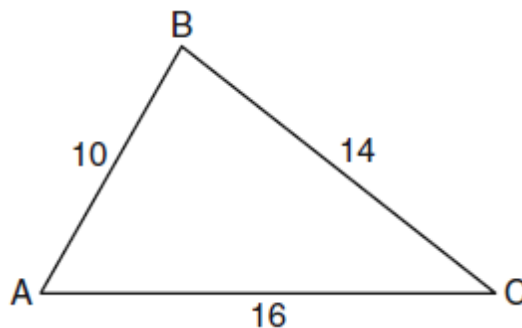


If $AC = 10$, $AT = 18$, and $CT = 22$, what is the perimeter of parallelogram $CDOG$?

- [A] 32 [B] 25 [C] 21 [D] 40

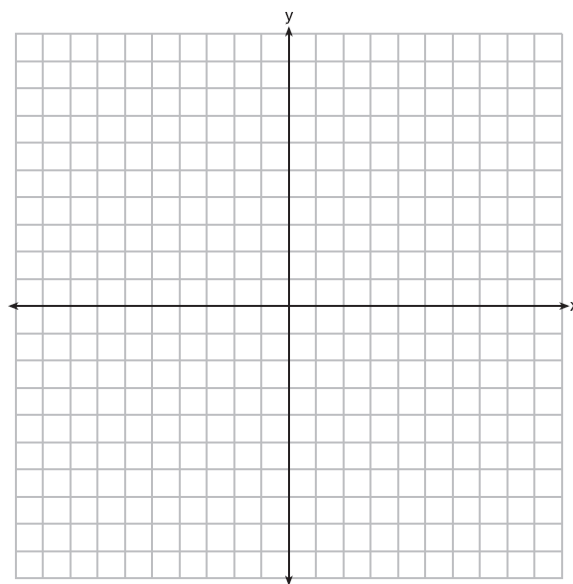
4. 060929ge, P.I. G.G.42

In the diagram of $\triangle ABC$ below, $AB = 10$, $BC = 14$, and $AC = 16$. Find the perimeter of the triangle formed by connecting the midpoints of the sides of $\triangle ABC$.



5. fall0835ge, P.I. G.G.42

On the set of axes below, graph and label $\triangle DEF$ with vertices at $D(-4, -4)$, $E(-2, 2)$, and $F(8, -2)$. If G is the midpoint of \overline{EF} and H is the midpoint of \overline{DF} , state the coordinates of G and H and label each point on your graph. Explain why $\overline{GH} \parallel \overline{DE}$.



NAME: _____

6. 010521a, P.I. G.G.42

If the midpoints of the sides of a triangle are connected, the area of the triangle formed is what part of the area of the original triangle?

[A] $\frac{1}{3}$ [B] $\frac{1}{4}$ [C] $\frac{1}{2}$ [D] $\frac{3}{8}$

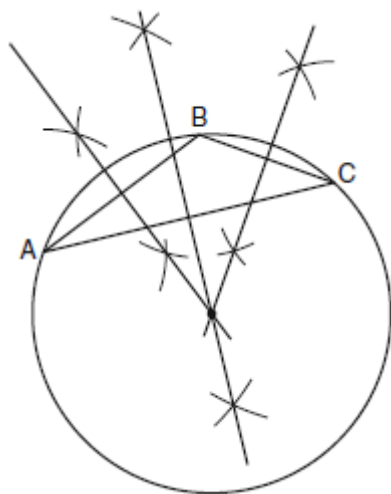
7. fall0825ge, P.I. G.G.21

In which triangle do the three altitudes intersect outside the triangle?

[A] an obtuse triangle
 [B] an acute triangle [C] a right triangle
 [D] an equilateral triangle

8. 080925ge, P.I. G.G.21

The diagram below shows the construction of the center of the circle circumscribed about $\triangle ABC$.

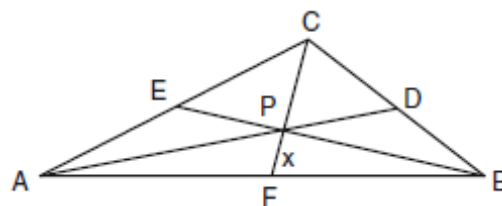


This construction represents how to find the intersection of

[A] the perpendicular bisectors of the sides of $\triangle ABC$
 [B] the angle bisectors of $\triangle ABC$
 [C] the medians to the sides of $\triangle ABC$
 [D] the altitudes to the sides of $\triangle ABC$

9. 060914ge, P.I. G.G.43

In the diagram of $\triangle ABC$ below, Jose found centroid P by constructing the three medians. He measured \overline{CF} and found it to be 6 inches.



If $PF = x$, which equation can be used to find x ?

[A] $3x + 2x = 6$ [B] $x + \frac{2}{3}x = 6$
 [C] $2x + x = 6$ [D] $x + x = 6$

[1] D

[2] D

[3] A

[2] 20, and appropriate work is shown.

[1] Appropriate work is shown, but one computational error is made.

or [1] Appropriate work is shown, but one conceptual error is made.

or [1] 20, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct

response that was obtained by an obviously

[4] incorrect procedure.

[4] $\triangle DEF$ is graphed and labeled correctly, $G(3,0)$ and $H(2,-3)$ are stated and labeled correctly, and an appropriate explanation is written, such as the slopes are congruent or the midsegment theorem.

[3] Appropriate work is shown, but one computational, graphing, or labeling error is made.

or [3] Appropriate work is shown, and an appropriate explanation is written, but the coordinates of G and H are missing or incorrect.

or [3] $\triangle DEF$ is graphed and labeled correctly, $G(3,0)$ and $H(2,-3)$ are stated and labeled correctly, appropriate work is shown to find the slopes of \overline{GH} and \overline{ED} , but the explanation is missing or incorrect.

[2] Appropriate work is shown, but two or more computational, graphing, or labeling errors are made.

or [2] Appropriate work is shown, but one conceptual error is made.

or [2] $\triangle DEF$ is graphed and labeled correctly, $G(3,0)$ and $H(2,-3)$ are stated and labeled correctly, but no further correct work is shown.

[1] Appropriate work is shown, but one conceptual error and one computational, graphing, or labeling error are made.

or [1] The midsegment theorem is written, but no work is shown.

or [1] $G(3,0)$ and $H(2,-3)$, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[5] incorrect procedure.

[6] B

[7] A

[8] A

[9] C