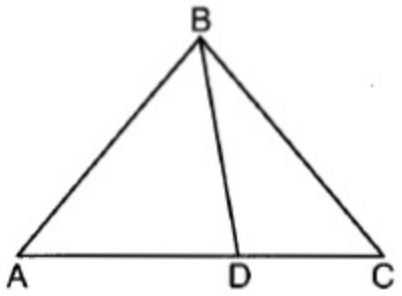
1. the diagram below, $\mathrm{m}\angle BDC = 100°$ and $\mathrm{m}\angle A = 50°$, and $\mathrm{m}\angle DBC = 30°$.

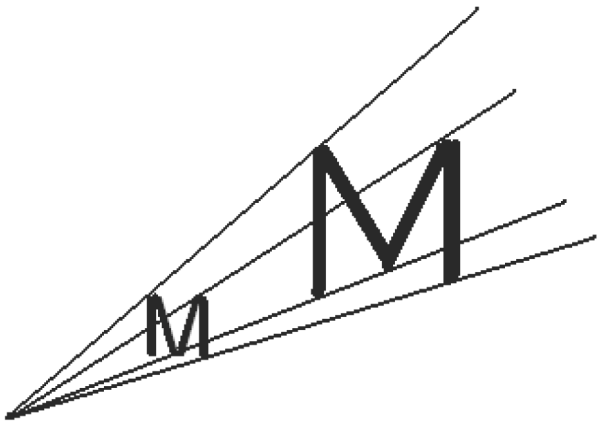



What are the other angle measures?
What kind of triangles do you see?

(2) $\Delta ABC$ is isoceles.
(4) $\Delta ABD$ is scalene.

2. If $\Delta ABC$ is dilated by a scale factor of 3, which statement is true of the image $\Delta A'B'C'$ ?

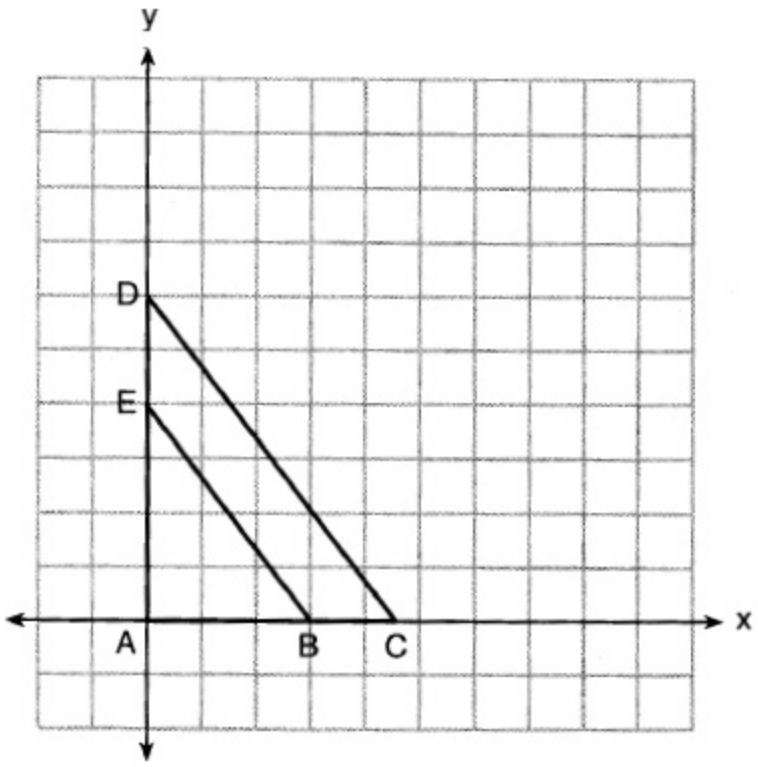
3. Which transformation for letter M is shown in the accompanying diagram?




4. Two right triangles must be congruent if

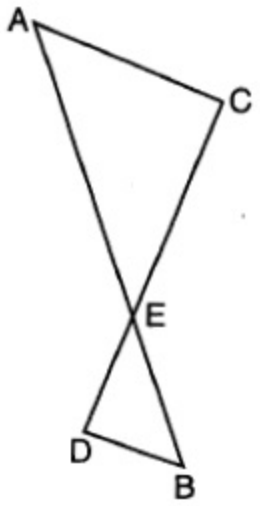
(1) an acute angle in each triangle is congruent
(2) the lengths of the hypotenuses are equal
(3) the corresponding legs are congruent
(4) the areas are equal

5. In the diagram below, $\Delta ABE$ is the image of $\Delta ACD$ after a dilation centered at the origin. The coordinates of the vertices are *A*(0,0), *B*(3,0), *C*(4.5,0), *D*(0,6), and *E*(0,4).



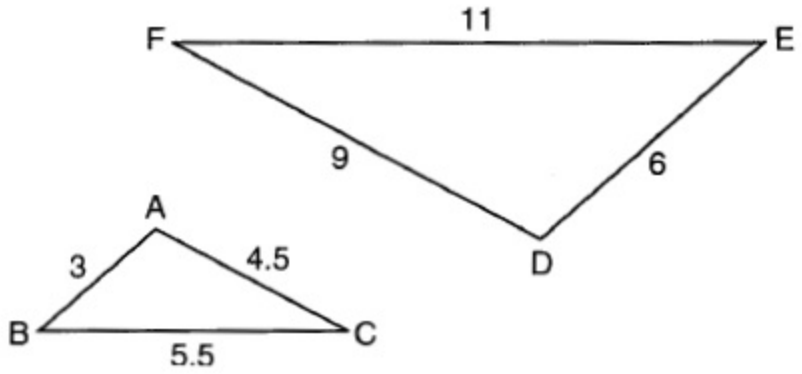

The ratio of the lengths of $\overline{BE}$ to $\overline{CD}$ is

6. As shown in the diagram below, $\overline{AB}$ and $\overline{CD}$ intersect at *E*, and $\overline{AC} \parallel \overline{BD}$.




Given $\Delta AEC \sim \Delta BED$, which equation is true?

7. In the diagram below, $\Delta DEF$ is the image of $\Delta ABC$ after a clockwise rotation of 180° and a dilation where *AB* = 3, *BC* = 5.5, *AC* = 4.5, *DE* = 6, *FD* = 9, and *EF* = 11.




Which relationship must always be true?

8. If $\Delta RST \sim \Delta ABC$,$\mathrm{m}\angle A = 7 + 8x$,$\mathrm{m}\angle C = 4x + 8$, and $\mathrm{m}\angle R = 3x - 60$, find $\mathrm{m}\angle C$

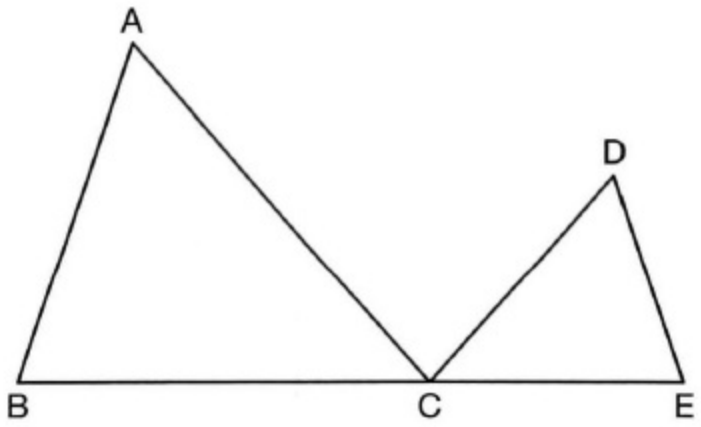
9. One function of a movie projector is to enlarge the image on the film. This procedure is an example of a

10. A three-inch line segment is dilated by a scale factor of 6 and centered at its midpoint. What is the length of its image?

11. A polygon is transformed according to the rule: $(x, y) \rightarrow (x + 2, y)$. Every point of the polygon moves two units in which direction?

12. The lines whose equations are $2x + 3y = 4$ and $y = mx + 6$ will be perpendicular when *m* is

13. In the diagram below, $\Delta ABC \sim \Delta DEC$.




If $AC = 12$, $DC = 7$, $DE = 5$, and the perimeter of $\Delta ABC$ is 30, what is the perimeter of $\Delta DEC$ ?

14. When the transformation $T_{2,-1}$ is performed on point $A$, its image is point $A'(-3, 4)$. What are the coordinates of $A$?

15. When $\Delta ABC$ is dilated by a scale factor of 2, its image is $\Delta A'B'C'$. Which statement is true?
    (1) $\overline{AC} \cong \overline{A}'\overline{C}'$
    (2) $\angle A \cong \angle A'$
    (3) perimeter of $\Delta ABC$ = perimeter of $\Delta A'B'C'$
    (4) 2(area of $\Delta ABC$) = area of $\Delta A'B'C'$

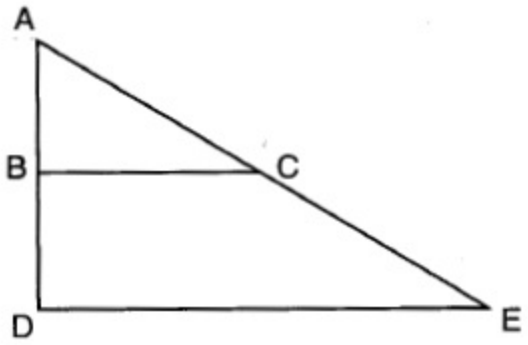
16. An equation of a line perpendicular to the line represented by the equation $y = -\frac{1}{2}x - 5$ and passing through $(6, -4)$ is

17. Which equation represents a line that passes through the point $(-2, 6)$ and is parallel to the line whose equation is $3x - 4y = 6$?

18. The graphs of the lines represented by the equations $y = \frac{1}{3}x + 7$ and $y = -\frac{1}{3}x - 2$ are

icular

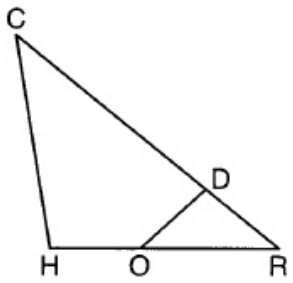
19. The image of $\Delta ABC$ after a dilation of scale factor *k* centered at point A is $\Delta ADE$, as shown in the diagram below.




    Which statement is always true?

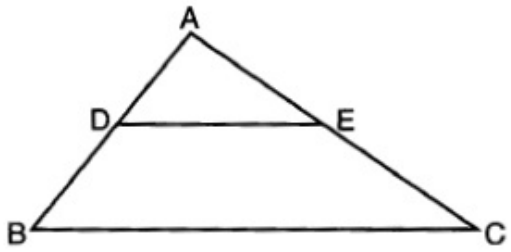
20. What is the image of the point (-5,2) under the translation $T_{3,-4}$ ?

21. In triangle *CHR*, *O* is on $\overline{HR}$, and *D* is on $\overline{CR}$ so that $\angle H \cong \angle RDO$.




If *RD* = 4, *RO* = 6, and *OH* = 4, what is the length of $\overline{CD}$?

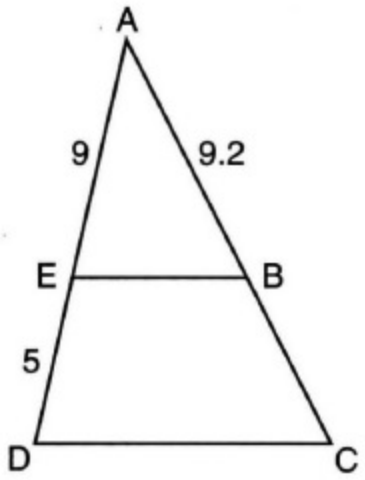
22. In the diagram below, $\Delta ABC \sim \Delta ADE$




Which measurements are justified by this similarity?

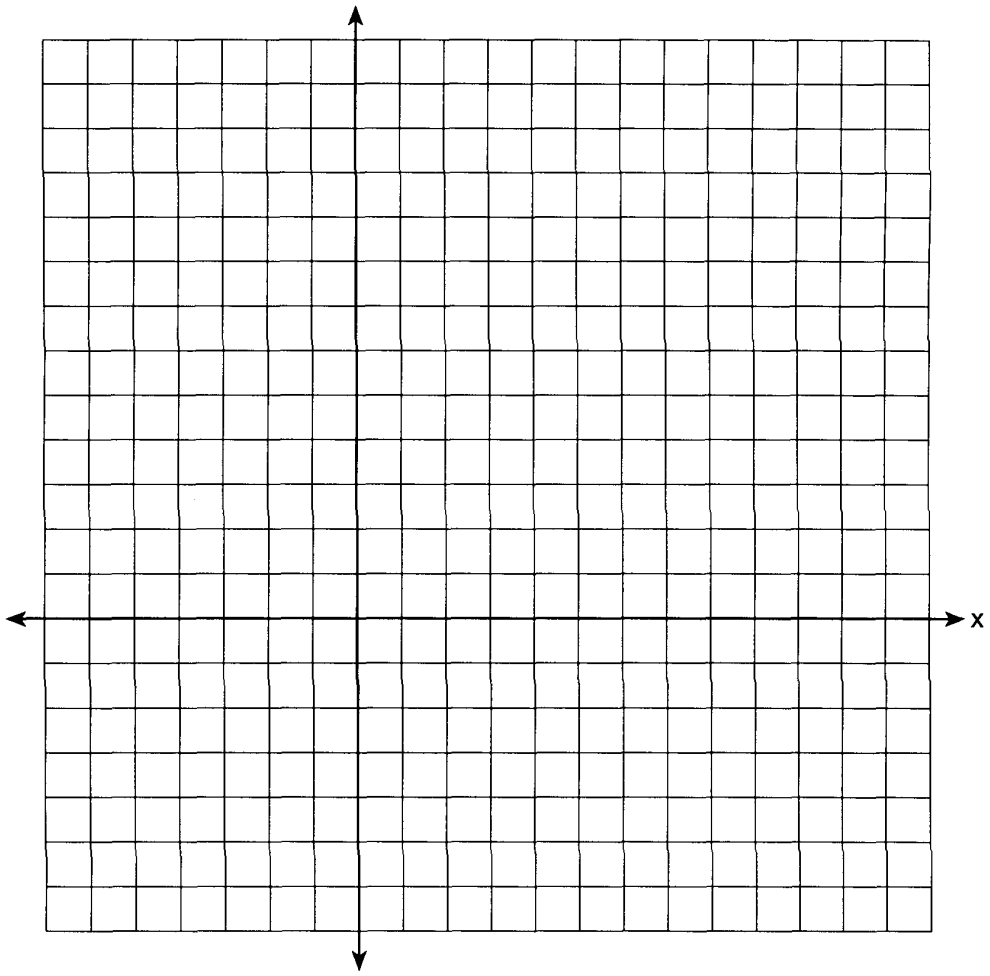
23. Which transformation would *not* always produce an image that would be congruent to the original figure?

24. In the diagram of $\Delta ADC$ below, $\overline{EB} \parallel \overline{DC}$, $AE = 9$, $ED = 5$, and $AB = 9.2$.

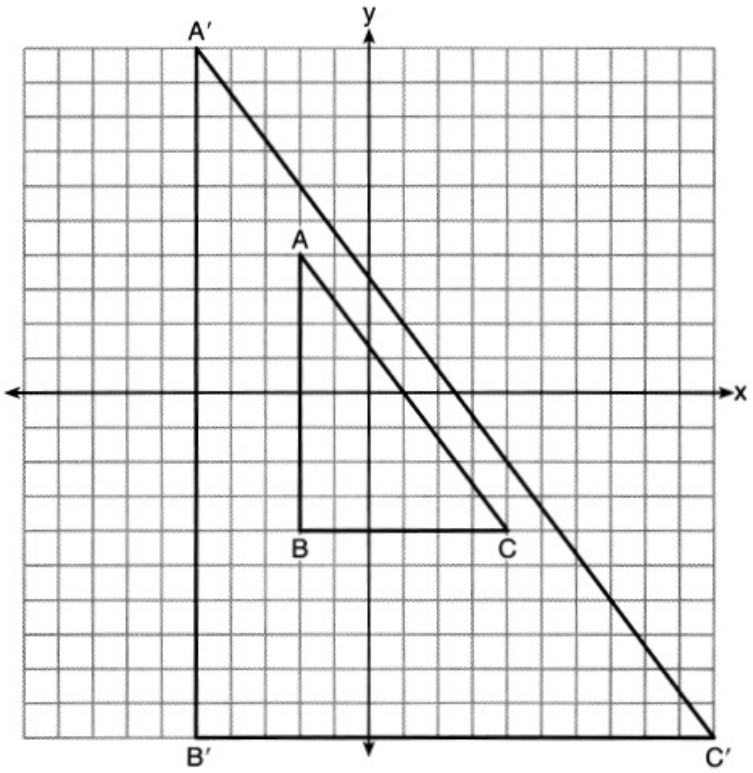



What is the length of $\overline{AC}$, to the *nearest tenth*?

25. On the provided set of axes below, graph a triangle whose coordinates are *A* (2,1), *B*(6,2), and *C*(3,5). With respect to this triangle, draw a dilation of scale



26. In the diagram below, $\Delta A'B'C'$ is the image of $\Delta ABC$ after a transformation.




Describe the transformation that was performed.

Explain why $\Delta A'B'C' \sim \Delta ABC$.