

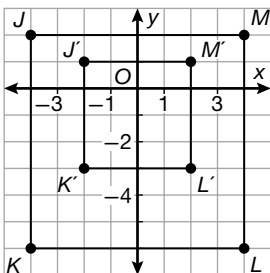
Warm Up 87

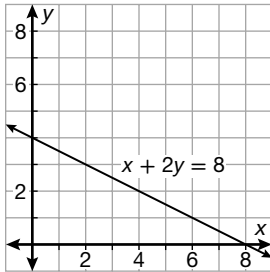
1. composite
2. perimeter is 142 in. and the area is 860 in^2
3. D

Lesson Practice 87

- a. By the definition of similar polygons $\frac{PQ}{WX} = \frac{QR}{XY} = \frac{PR}{WY}$ and $\angle P \cong \angle W$. In $\triangle PQS$ and $\triangle WXZ$, $\angle PSQ \cong \angle WZX$. Therefore $\triangle PQS \sim \triangle WXZ$ by the AA Similarity Postulate. By the definition of similar polygons, $\frac{PQ}{WX} = \frac{QS}{XZ} = \frac{SP}{ZW}$. By substitution, $\frac{QR}{XY} = \frac{SP}{ZW}$. By the formula for the area of a triangle, $\frac{\text{Area } \triangle PQR}{\text{Area } \triangle WXY} = \left(\frac{PR}{WY}\right)\left(\frac{QS}{XZ}\right)$. By substitution, $\left(\frac{QS}{XZ}\right)\left(\frac{PR}{WY}\right) = \frac{PR^2}{WY^2}$. Therefore, $\frac{\text{Area } \triangle PQR}{\text{Area } \triangle WXY} = \frac{PR^2}{WY^2}$.
- b. 80 feet
- c. 4:25; 375 cm^2
- d. 150 ft^2

Practice 87

1. 980 m^2
2. about 310 cm^2
3. $D(-3, 1); E(2, 0.5)$
4. 
5. $a + b > c, b + c > a$
and $c + a > b$
6. 4.5
7. 96 ft^3
8. 3 additional flavorings;
\$4.75
9. Anthony; Unless it is known that both pairs of sides are parallel, Jerrod's statement could define a trapezoid.
10. 160 inches
11. 50°

12. 201.1 cm^2
13. Cut the cross section just below one of the corners and through three edges.
14. 2 and $2\sqrt{3}$
15. C
16. 424 feet
17. 
18. 6
19. 5.5
20. resultant vector:
 $\langle 3, -3 \rangle$, magnitude:
4.24
21. 0
22. 27.71 cm^2

23. No. The ratio of the legs of the two new trapezoids will be 1:1, but the corresponding bases need not be in this ratio.
24. $P = 84 \text{ cm}; A = 509 \text{ cm}^2$
25. The sum of the areas of each plane figure in the net is equal to the surface area of the completed solid.
26. The two circles do not have any common tangents and they are not tangent circles.
27. First find the distances between adjacent vertices using the distance formula. Then add the distances together to find the perimeter.
28. sine; cosine
29. C
30. 27 in^3