

**Warm Up 68**

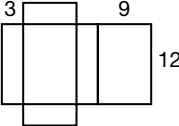
1. ratio
2.  $a = 6$
3. B

**Lesson Practice 68**

- a.  $\sin T = \frac{12}{13}$
- b.  $\tan U = \frac{5}{12}$
- c.  $x \approx 25.80$
- d. 0.5
- e. 0
- f. 1
- g.  $h \approx 9.85$  ft

## Practice 68

1. with the current: 1 mi/hr;  
against the current:  
5 mi/hr
2.  $x = \sqrt{53}$
3. 2.74 ft
4. 10
5. D
6.  $72^\circ$
7.  $\sin Q = \frac{a}{c}$ ,  $\cos Q = \frac{b}{c}$ ,  
 $\tan Q = \frac{a}{b}$
8.  $90^\circ$
9. 125 spins
10.  $P = 16\sqrt{2}$  in.;  
 $A = 32$  in<sup>2</sup>
11. 742 m<sup>2</sup>
12. no
13. 0.4
14. 3
15. She counted the diagonal sections as having a length of 1;  
 $P = 12 + 2\sqrt{5} + 4\sqrt{2}$
16. Since  $\overline{EM}$  and  $\overline{BA}$  are parallel,  $\angle MEB \cong \angle ABK$ . Since  $\angle ABK \cong \angle KRA$  and  $\angle BKR \cong \angle BAR$ ,  $BARK$  is a parallelogram
17. No. While it is true that whales do not have feathers, it does not follow from the given statements, since the first statement does not say that birds exclusively have feathers.
18. 48 in.
19. 13 cm

20. Both triangles are isosceles because  $MQ = M'Q$  and  $PQ = P'Q$ ; since their vertex angles both measure  $72^\circ$ , their base angles each measure  $54^\circ$ ; so by definition of angles and AA similarity,  $\triangle MM'Q \sim \triangle PP'Q$ .
21. 
22. Yes, but only if the side length is 4 units.
23.  $\triangle LMN$  and  $\triangle OPQ$  are right triangles, legs  $\overline{LM} \cong \overline{PQ}$ , and legs  $\overline{MN} \cong \overline{OP}$ ; by LL Congruence Theorem,  $\triangle LMN \cong \triangle QOP$ .
24. A
25.  $50^\circ$
26.  $x = 2.5, y = 7.5$
27. By definition of angle bisector,  $\angle QTR$  is congruent to  $\angle RTS$ . By definition of congruent angles,  $m\angle QTR = m\angle RTS$ . Substituting the given information gives  $m\angle RTS = 45^\circ$ . By the Angle Addition Postulate,  $m\angle QTR + m\angle RTS = m\angle QTS$ . Substituting again,  $45^\circ + 45^\circ = m\angle QTS$ , which simplifies to  $90^\circ = m\angle QTS$ . This is the definition of a right angle, so  $\angle QTS$  is a right angle.
28.  $\frac{33}{45} \approx 0.73$
29. Yes, they are parallel, because the transversals divide the lines proportionately.
30. C