On the blank beside each pair of triangles write the reason that they are congruent. Follow the reasons **in order** through the maze and you will get through without coming to a bad end.
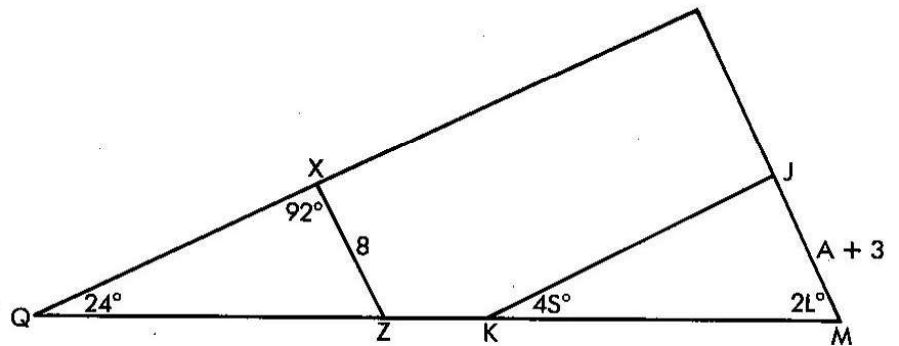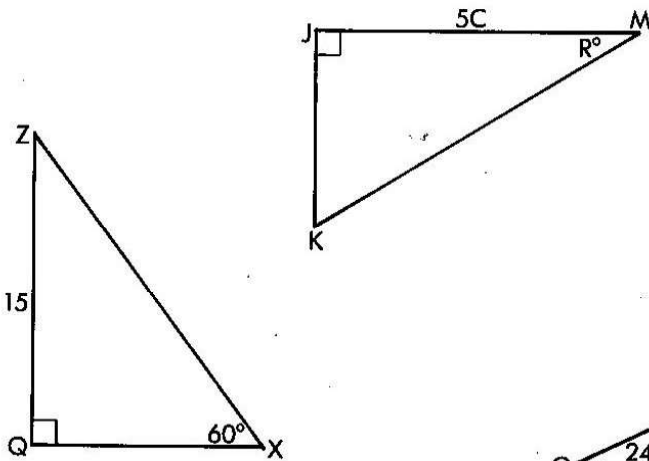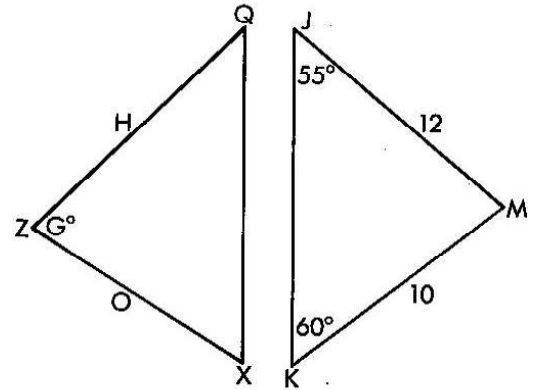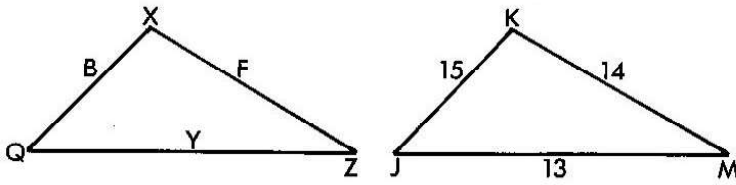
1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

Suppose you want to prove that △ QXZ ≅ △ JKM. What value must the variable(s) have in each exercise? After you've found the value for each variable, decipher the code below for an important application of geometry.

Note: Q, Z, X, J, K, and M are NOT variables.
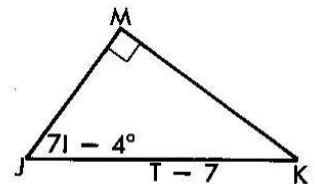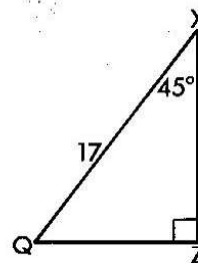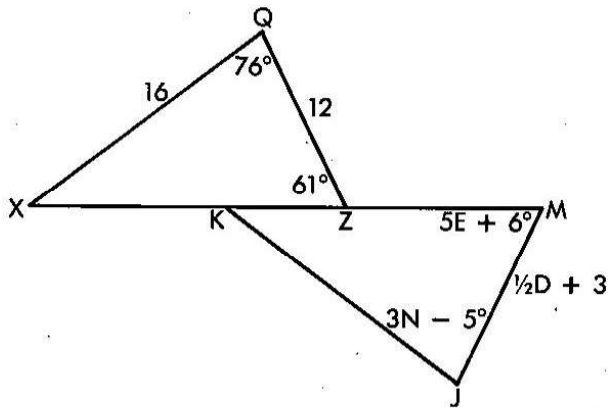
6 7 27 3 11   24 30 7 5 27 65 32 11 6   5 30 11

30 7 65 7 18   24 12 11 13   5 30 11   16 6 11 14 16 32

24 10   15 16 7 32 18 11 30 6   5 27 18   5 30 3 12 7 24 11 3 24 6