Applying Properties of a triangle- Final review part 4

Use the figure at the right for problems 1-3.

1. Find m∠3 if m∠5 = 130 and m∠4 = 70. *60°*

2. Find m∠2 if m∠4 = 73 and m∠4 = 65. *8°*

3. Find m∠2 if m∠3 = 125 and m∠4 = 23. *32°*
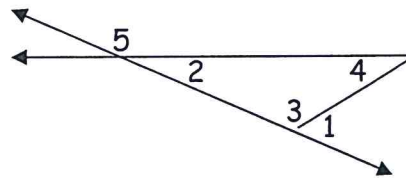
Use the figure at the right for problems 4-7.

4. m∠6 + m∠7 + m∠8 = *180°* .

5. If m∠6 = x, m∠7 = x – 20, and m∠11 = 80,
   then x = *50* .

6. If m∠8 = 4x, m∠7 = 30, and m∠9 = 6x -20,
   then x = *25* .

7. m∠9 + m∠10 + m∠11 = *360°* .

For 8 – 12, solve for x.

8.

$(5x)°$ 120 $x°$ *30°*

9.

$x°$ 140°   35°   *75°*

10.

$(4x)°$ $x°$ $(3x + 54)°$ *27°*

11.
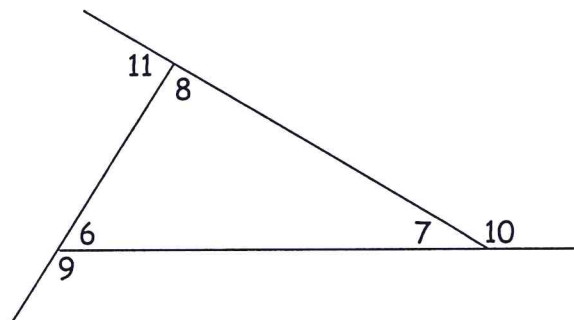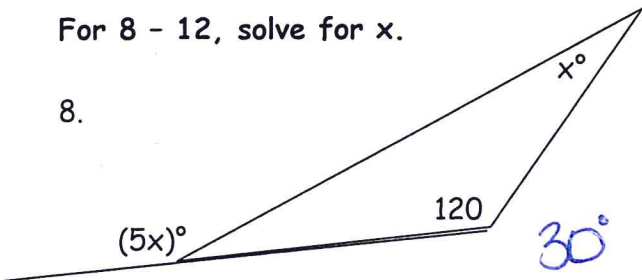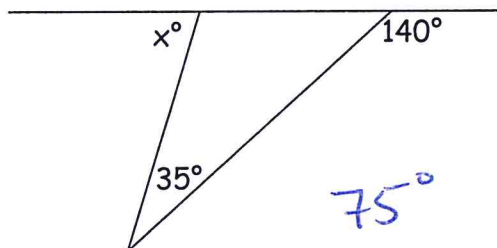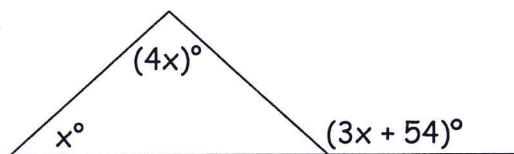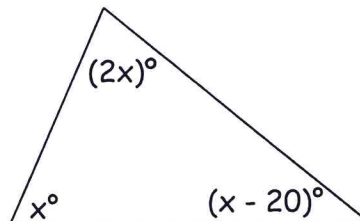
$(2x)°$ $x°$ $(x - 20)°$ *50°*

12-14. Find m∠1, m∠2, m∠3, m∠4, and m∠5.
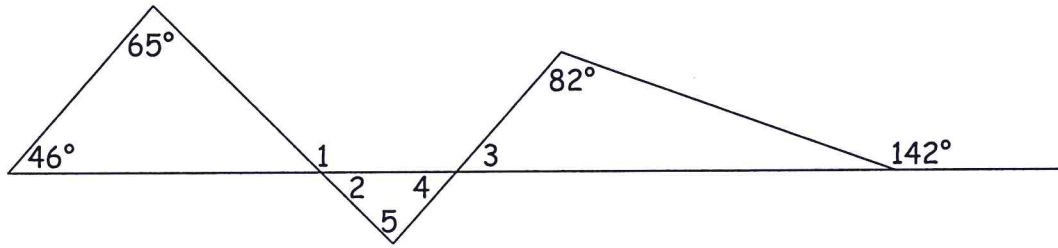
$m\angle 5 = 51°$

Find the value of the missing variables.

15.

35

16.

$2x + 6$

$3x - 6$

12

17.

$6x°$
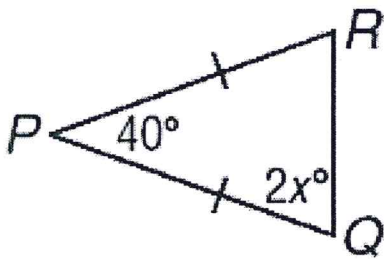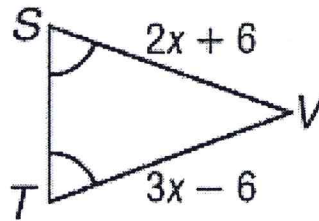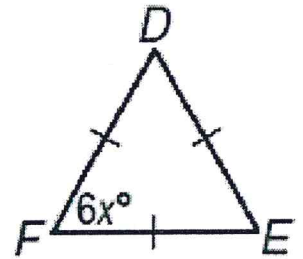
$10°$

18.
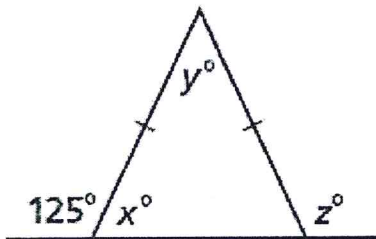
$x = 55°$

$y = 70°$

$z = 125°$

Is it possible for a triangle to have sides with the following lengths?

19. YES or (NO)	Side lengths: 20, 9, 8
20. (YES) or NO	Side lengths: 3, 4, 5
21. (YES) or NO	Side lengths: 9, 12, 15

22.

The lengths of two sides of a triangle are 26 and 48 meters. What is the range of the possible side lengths, in meters, for the third side, x, of this triangle? Write your answer in the boxes.

$$\boxed{22} < x < \boxed{74}$$

23.

Which of the following could represent the side lengths of a triangle? Check all that apply.

- ☑ 19, 11, 17
- ☐ 23, 28, 52
- ☐ 34, 9, 25
- ☑ 13, 22, 14

Find the range for the measure of the third side of a triangle given the measures of two sides.

24.

a. 4ft, 8ft $\quad 4 < x < 12$

b. 5m, 11m $\quad 6 < x < 16$

c. 20m, 13m $\quad 7 < x < 33$