

6-1 Angles of polygons

Name _____

Tell the sum of the measures of the interior angles of the following shapes.

- | | |
|--------------------------|---------------------|
| 1. Hexagon = _____ | 2. Octagon = _____ |
| 3. Quadrilateral = _____ | 4. Pentagon = _____ |
| 5. Decagon = _____ | 6. Heptagon = _____ |
| 7. 22-gon = _____ | 8. Nonagon = _____ |

Figure 1

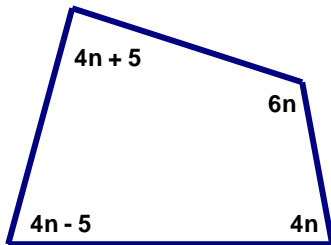


Figure 2

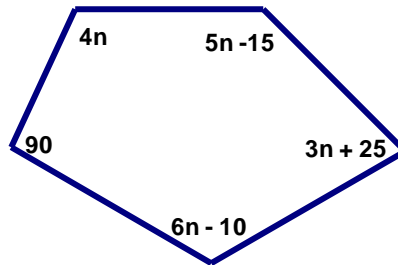
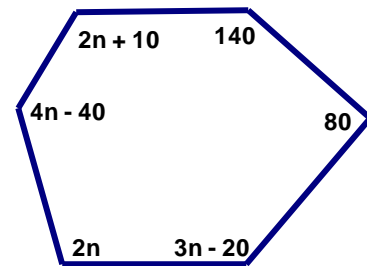


Figure 3



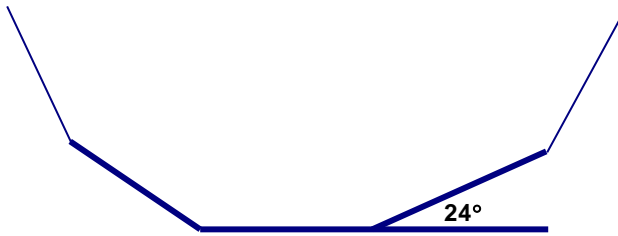
9. What is the value of n in Figure 1 above? _____
10. What is the value of n in Figure 2 above? _____
11. What is the value of n in Figure 3 above? _____
12. How many degrees is each interior angle of a regular decagon? _____
13. How many degrees is each interior angle of a regular octagon? _____
14. How many degrees is each interior angle of a regular pentagon? _____
15. How many degrees is each interior angle of a regular dodecagon? _____
16. How many degrees is each interior angle of a regular hexagon? _____

17. How many degrees is each exterior angle of a decagon? _____
18. How many degrees is each exterior angle of a pentagon? _____
19. How many degrees is each exterior angle of an octagon? _____
20. How many degrees is each exterior angle of a hexagon? _____
21. The measure of an interior angle of a regular polygon is 108 degrees.
How many sides must this polygon have?

22. The measure of an interior angle of a regular polygon is 144 degrees.
How many sides must this polygon have?

23. The measure of an interior angle of a regular polygon is 150 degrees.
How many sides must this polygon have?

24. If one exterior angle of a regular polygon measures 72° , what
is the measure of one interior angle?



25. A portion of a regular polygon is shown above.
How many sides must the polygon have? _____
26. True story: I am planning to build a large flowerbed in the shape of a regular octagon. I will use thick pieces of wood like railroad ties that are 8 feet in length. Once I have the first piece of wood put down, what interior angle should I make with the next piece of wood that I place down in order to make sure that I get a regular octagon (remember that regular means all the angles will be the same along with the lengths, which you already know is 8 feet).
