

For each angle given, find the measure of the reference angle, then draw the angle in standard position. Mark the reference angle on your sketch.

1.  $137^\circ$

2.  $198^\circ$

3.  $259^\circ$

4.  $147^\circ$

5.  $342^\circ$

6.  $21^\circ$

7.  $54^\circ$

8.  $283^\circ$

9.  $-160^\circ$

10.  $-220^\circ$

11.  $-295^\circ$

12.  $-86^\circ$

13.  $98.6^\circ$

14.  $57.3^\circ$

15.  $-154.1^\circ$

16.  $-273.2^\circ$

17.  $5481^\circ$

18.  $7321^\circ$

19.  $-2746^\circ$

20.  $-3614^\circ$

21.  $154^\circ 37'$

22.  $268^\circ 29'$

23.  $213^\circ 16'$

24.  $121^\circ 43'$

25.  $291^\circ 44'$

26.  $352^\circ 16'$

27.  $1066^\circ 31'$

28.  $2001^\circ 34'$

29.  $7321^\circ 46'$

30.  $9007^\circ 10'$

31.  $242^\circ 19' 27''$

32.  $146^\circ 57' 12''$

33.  $112^\circ 48' 13''$

34.  $345^\circ 11' 59''$

## Answers

1.  $43^\circ$
2.  $18^\circ$
3.  $79^\circ$
4.  $33^\circ$
5.  $18^\circ$
6.  $21^\circ$
7.  $54^\circ$
8.  $77^\circ$
9.  $20^\circ$
10.  $40^\circ$
11.  $65^\circ$
12.  $86^\circ$
13.  $81.4^\circ$
14.  $57.3^\circ$
15.  $25.9^\circ$
16.  $86.8^\circ$
17.  $81^\circ$
18.  $59^\circ$
19.  $46^\circ$
20.  $14^\circ$
21.  $25^\circ 23'$
22.  $88^\circ 29'$
23.  $33^\circ 16'$
24.  $58^\circ 17'$
25.  $68^\circ 16'$
26.  $7^\circ 44'$
27.  $13^\circ 29'$
28.  $21^\circ 34'$
29.  $58^\circ 14'$
30.  $7^\circ 10'$
31.  $62^\circ 19' 27''$
32.  $33^\circ 2' 48''$
33.  $67^\circ 11' 47''$
34.  $14^\circ 48' 1''$