Degrees & Radians Conversion Practice

What is a radian? It's a way to measure angles based on circles and π.

How do I convert from degrees to radians? Multiply your degree measure by $\frac{\pi}{180^\circ}$ and simplify.

- Treat the π like a variable (do NOT use 3.14).
- Radian measures don't use symbols like degree measures do.
- Example: 50° $\quad 50^\circ \cdot \frac{\pi}{180^\circ} = \frac{50^\circ \cdot \pi}{180^\circ} = \frac{5\pi}{18}$ $\quad$ So $\frac{5\pi}{18}$ radians.

How do I convert from radians to degrees? Multiply your radian measure by $\frac{180^\circ}{\pi}$.

- Cancel the π if there is one.
- If the radian measure doesn't have a π, then use 3.14 when you divide.
- Example: $\frac{2\pi}{3}$ $\quad \frac{2\pi}{3} \cdot \frac{180^\circ}{\pi} = \frac{2\pi \cdot 180^\circ}{3\pi} = \frac{360^\circ}{3} = 120^\circ$

Can angles really be bigger than 180°? Yes

Bigger than 360°? Yes

Negative? Yes, now stop asking and start converting.

Convert each degree measure into radians.

1) -290°

2) 345°

3) 970°

4) -510°

5) 510°

6) 150°

7) 210°

8) -240°

9) 240°

10) 600°

11) -945°

12) 675°

13) 315°

14) 570°

15) -520°

16) 40°

Convert each radian measure into degrees.

21) $\frac{\pi}{18}$

22) $-\frac{25\pi}{12}$

23) $\frac{35\pi}{18}$

24) $\frac{41\pi}{36}$

25) $-\frac{3\pi}{2}$

26) $\frac{107\pi}{36}$

27) $\frac{\pi}{3}$

28) $-\frac{17\pi}{9}$

29) $-\frac{11\pi}{3}$

30) $-\frac{41\pi}{12}$

31) $\frac{14\pi}{3}$

32) $-\frac{16\pi}{3}$

Convert each degree measure into radians and each radian measure into degrees.

41) $-\frac{\pi}{6}$

42) $-\frac{23\pi}{6}$

43) -30°

44) -930°

45) -210°

46) $\frac{\pi}{4}$

47) -160°

48) $-\frac{\pi}{3}$

49) $\frac{11\pi}{6}$

50) $\frac{17\pi}{12}$

51) 915°

52) $\frac{\pi}{2}$