

A2.M.2: Radian Measure 2: Convert between radian and degree measures

- 1 Express $\frac{2\pi}{9}$ radians in degree measure.
- 2 A central angle of $\frac{4\pi}{15}$ radians intercepts an arc whose degree measure is
1) 48 2) 72 3) 96 4) $\frac{4\pi}{15}$
- 3 Express $\frac{7\pi}{18}$ radians in degree measure.
- 4 Express in degree measure an angle of $\frac{2\pi}{5}$ radians.
- 5 Express $\frac{5\pi}{12}$ radians in degrees.
- 6 The number of degrees equal to $\frac{5}{9}\pi$ radians is
1) 45 2) 90 3) 100 4) 900
- 7 What is the number of degrees in an angle whose radian measure is $\frac{7\pi}{12}$?
1) 150 2) 165 3) 330 4) 518
- 8 Express $\frac{7\pi}{10}$ radians in degree measure.
- 9 Express $\frac{3\pi}{4}$ radians in degrees.
- 10 What is the number of degrees in an angle whose radian measure is $\frac{11\pi}{12}$?
1) 150 2) 165 3) 330 4) 518
- 11 Express $\frac{7\pi}{6}$ radians in degrees.
- 12 Express 1.2π radians in degrees.
- 13 Express $\frac{7\pi}{5}$ radians in degrees.
- 14 What is the number of degrees in an angle whose radian measure is $\frac{8\pi}{5}$?
1) 576 2) 288 3) 225 4) 113
- 15 Express in degree measure, an angle whose radian measure is $\frac{7\pi}{3}$.
- 16 Expressed in degrees, $\frac{8\pi}{3}$ is equivalent to
1) 240° 2) 300° 3) 420° 4) 480°
- 17 Express 3π radians in degrees.
- 18 Express $\frac{10\pi}{3}$ radians in degree measure.
- 19 If placed in standard position, an angle of $\frac{11\pi}{6}$ radians has the same terminal side as an angle of
1) -150° 2) 150° 3) -30° 4) 240°
- 20 What is the number of degrees in an angle whose measure is 2 radians?
1) $\frac{360}{\pi}$ 2) $\frac{\pi}{360}$ 3) 360 4) 90
- 21 Approximately how many degrees does five radians equal?
1) 286 2) 900 3) $\frac{\pi}{36}$ 4) 5π
- 22 Find, to the *nearest tenth of a degree*, the angle whose measure is 2.5 radians.
- 23 Determine, to the *nearest minute*, the number of degrees in an angle whose measure is 2.5 radians.
- 24 Determine, to the *nearest minute*, the degree measure of an angle of $\frac{5}{11}\pi$ radians.
- 25 Convert 2.5 radians to degrees, and express the answer to the *nearest minute*.
- 26 Convert 3 radians to degrees and express the answer to the *nearest minute*.
- 27 Find, to the *nearest minute*, the angle whose measure is 3.45 radians.

A2.M.2: Radian Measure 2: Convert between radian and degree measures**Answer Section**

1 ANS:
40

REF: 088901siii

2 ANS: 1 REF: 011006b

3 ANS:
70

REF: 080301siii

4 ANS:
72

REF: 068701siii

5 ANS:
75

REF: 080201siii

6 ANS: 3

$$\frac{5\pi}{9} \cdot \frac{180^\circ}{\pi} = \frac{900}{9} = 100^\circ$$

REF: 060901b

7 ANS:

$$105. \frac{7\pi}{12} \cdot \frac{180^\circ}{\pi} = \frac{1260}{12} = 105^\circ$$

REF: 080623b

8 ANS:
126

REF: 068108siii

9 ANS:
135

REF: 018603siii

10 ANS: 2

$$\frac{11\pi}{12} \cdot \frac{180}{\pi} = 165$$

REF: 061002a2

11 ANS:
210

REF: 010001siii

12 ANS:
216

REF: 019707siii

13 ANS:
252

REF: 089801siii

14 ANS: 2
 $\frac{8\pi}{5} \cdot \frac{180}{\pi} = 288$

REF: 061302a2

15 ANS:
420

REF: 088703siii

16 ANS: 4 REF: 068916siii

17 ANS:
540

REF: 089002siii

18 ANS:
600

REF: 010201siii

19 ANS: 3 REF: 010121siii

20 ANS: 1
 $2 \cdot \frac{180}{\pi} = \frac{360}{\pi}$

REF: 011220a2

21 ANS: 1
 $5 \cdot \frac{180}{\pi} \approx 286$

REF: 011427a2

22 ANS:
 $2.5 \cdot \frac{180}{\pi} \approx 143.2^\circ$

REF: 011129a2

23 ANS:
 $2.5 \left(\frac{180}{\pi} \right) = 143^\circ 14'$

REF: 081528a2

24 ANS:

$$\frac{5}{11} \pi \left(\frac{180}{\pi} \right) = 81^\circ 49'$$

REF: 011531a2

25 ANS:

$$2.5 \cdot \frac{180}{\pi} \approx 143^\circ 14'$$

REF: 061431a2

26 ANS:

$$3 \times \frac{180}{\pi} \approx 171.89^\circ \approx 171^\circ 53'.$$

REF: 011335a2

27 ANS:

$$197^\circ 40'$$

REF: fall0931a2