

**F.TF.A.1: Radian Measure 3**

- 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  $\frac{7\pi}{12}$ ?
- 8 Express  $\frac{7\pi}{10}$  radians in degree measure.
- 9 Express  $\frac{3\pi}{4}$  radians in degrees.
- 10 Determine the number of degrees in  $\frac{8\pi}{9}$  radians.
- 11 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
- 12 Express  $\frac{7\pi}{6}$  radians in degrees.
- 13 Express  $1.2\pi$  radians in degrees.
- 14 Express  $\frac{7\pi}{5}$  radians in degrees.

- 15 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
- 16 Express in degree measure, an angle whose radian measure is  $\frac{7\pi}{3}$ .
- 17 Expressed in degrees,  $\frac{8\pi}{3}$  is equivalent to
- 1)  $240^\circ$
  - 2)  $300^\circ$
  - 3)  $420^\circ$
  - 4)  $480^\circ$
- 18 Express  $3\pi$  radians in degrees.
- 19 Express  $\frac{10\pi}{3}$  radians in degree measure.
- 20 If placed in standard position, an angle of  $\frac{11\pi}{6}$  radians has the same terminal side as an angle of
- 1)  $-150^\circ$
  - 2)  $150^\circ$
  - 3)  $-30^\circ$
  - 4)  $240^\circ$
- 21 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
- 22 Approximately how many degrees does five radians equal?
- 1) 286
  - 2) 900
  - 3)  $\frac{\pi}{36}$
  - 4)  $5\pi$
- 23 Find, to the *nearest tenth of a degree*, the angle whose measure is 2.5 radians.
- 24 Determine, to the *nearest minute*, the number of degrees in an angle whose measure is 2.5 radians.
- 25 Determine, to the *nearest minute*, the degree measure of an angle of  $\frac{5}{11}\pi$  radians.
- 26 Convert 2.5 radians to degrees, and express the answer to the *nearest minute*.
- 27 Convert 3 radians to degrees and express the answer to the *nearest minute*.

- 28 Find, to the *nearest minute*, the angle whose measure is 3.45 radians.

**F.TF.A.1: Radian Measure 3****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:  

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

REF: 080623b

8 ANS:  
126

REF: 068108siii

9 ANS:  
135

REF: 018603siii

10 ANS:  

$$\frac{8\pi}{9} \left( \frac{180}{\pi} \right) = 160$$

REF: 081635a2

11 ANS: 2  

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

REF: 061002a2

12 ANS:  
210

REF: 010001siii

13 ANS:  
216

REF: 019707siii

14 ANS:  
252

REF: 089801siii

15 ANS: 2  

$$\frac{8\pi}{5} \cdot \frac{180}{\pi} = 288$$

REF: 061302a2

16 ANS:  
420

REF: 088703siii

17 ANS: 4                      REF: 068916siii

18 ANS:  
540

REF: 089002siii

19 ANS:  
600

REF: 010201siii

20 ANS: 3                      REF: 010121siii

21 ANS: 1  

$$2 \cdot \frac{180}{\pi} = \frac{360}{\pi}$$

REF: 011220a2

22 ANS: 1  

$$5 \cdot \frac{180}{\pi} \approx 286$$

REF: 011427a2

23 ANS:

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

REF: 011129a2

24 ANS:

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

REF: 081528a2

25 ANS:

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

REF: 011531a2

26 ANS:

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

REF: 061431a2

27 ANS:

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

REF: 011335a2

28 ANS:

$$197^\circ 40'. \quad 3.45 \times \frac{180}{\pi} \approx 197^\circ 40'.$$

REF: fall0931a2