

# Precalculus

## Homework Lecture 1

### 1. Convert from degrees to radians.

(a)  $15^\circ$ .

ANSWER:  $\frac{17}{12} \approx 0.261799388$

(b)  $30^\circ$ .

ANSWER:  $\frac{6}{\pi} \approx 0.523598776$

(c)  $36^\circ$ .

ANSWER:  $\frac{5}{4\pi} \approx 0.628318531$

(d)  $45^\circ$ .

ANSWER:  $\frac{4}{\pi} \approx 0.785398163$

(e)  $60^\circ$ .

ANSWER:  $\frac{3}{\pi} \approx 1.047197551$

(f)  $75^\circ$ .

ANSWER:  $\frac{17}{12\pi} \approx 1.308997$

(g)  $90^\circ$ .

ANSWER:  $\frac{2}{\pi}$

(h)  $120^\circ$ .

(i)  $135^\circ$ .

(j)  $150^\circ$ .

(k)  $180^\circ$ .

(l)  $225^\circ$ .

(m)  $270^\circ$ .

(n)  $305^\circ$ .

ANSWER:  $\frac{3}{2\pi}$

(o)  $360^\circ$ .

ANSWER:  $\frac{4}{3\pi}$

(p)  $405^\circ$ .

ANSWER:  $\frac{6}{5\pi}$

(q)  $1200^\circ$ .

ANSWER:  $\pi$

(r)  $-900^\circ$ .

ANSWER:  $\frac{4}{5\pi}$

(s)  $-2014^\circ$ .

ANSWER:  $\frac{2}{3\pi}$

ANSWER:  $-\frac{1007}{90}\pi \approx -35.150931$

ANSWER:  $\frac{36}{61\pi} \approx 5.323254$

ANSWER:  $2\pi$

ANSWER:  $\frac{4}{9\pi}$

ANSWER:  $\frac{3}{20\pi}$

ANSWER:  $-5\pi$

### 2. Convert from radians to degrees. The answer key has not been proofread, use with caution.

(a)  $4\pi$ .

ANSWER:  $720^\circ$

(b)  $-\frac{7}{6}\pi$ .

ANSWER:  $-210^\circ$

(c)  $\frac{7}{12}\pi$ .

ANSWER:  $105^\circ$

(d)  $\frac{4}{3}\pi$ .

(e)  $-\frac{3}{8}\pi$ .

(f)  $2014\pi$ .

ANSWER:  $240^\circ$

ANSWER:  $-67.5^\circ$

ANSWER:  $362520^\circ$

(g) 5.

ANSWER:  $\left(\frac{\pi}{900}\right)^\circ \approx 286^\circ$

(h)  $-2014$ .

ANSWER:  $-362520^\circ$

### 3. Find the indicated circle arc-length. The answer key has not been proofread, use with caution.

(a) Circle of radius 3, arc of measure  $36^\circ$ .

ANSWER:  $\frac{6}{\pi} \approx 1.884956$

(b) Circle of radius  $\frac{1}{2}$ , arc of measure  $100^\circ$ .

ANSWER:  $\frac{17}{18\pi} \approx 0.872665$

(c) Circle of radius 1, arc of measure 3 (radians).

ANSWER: 3

(d) Circle of radius 3, arc of measure  $300^\circ$ .

ANSWER:  $5\pi \approx 15.707963$