

Precalculus

Homework

Angles

1. Convert from degrees to radians.

(a) 15° .

ANSWER: $\frac{1\pi}{12} \approx 0.261799388$

(b) 30° .

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

(c) 36° .

ANSWER: $\frac{2\pi}{5} \approx 0.628318531$

(d) 45° .

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

(e) 60° .

ANSWER: $\frac{3\pi}{6} \approx 1.047197551$

(f) 75° .

ANSWER: $\frac{5\pi}{12} \approx 1.308997$

(g) 90° .

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

(h) 120° .

(i) 135° .

(j) 150° .

(k) 180° .

(l) 225° .

(m) 270° .

(n) 305° .

ANSWER: $\frac{31\pi}{36} \approx 5.323254$

(o) 360° .

ANSWER: 2π

(p) 405° .

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

(q) 1200° .

ANSWER: π

(r) -900° .

ANSWER: $-\frac{5\pi}{2}$

(s) -2014° .

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

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

(a) 4π .

ANSWER: 720°

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

ANSWER: -210°

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

ANSWER: 105°

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

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

(f) 2014π .

ANSWER: 240°

ANSWER: -67.5°

ANSWER: 362520°

(g) 5 .

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

(h) -2014 .

ANSWER: -362520°

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° .

ANSWER: $\frac{3\pi}{5} \approx 1.884956$

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

ANSWER: $\frac{1\pi}{18} \approx 0.872665$

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

ANSWER: 3

(d) Circle of radius 3, arc of measure 300° .

ANSWER: $5\pi \approx 15.707963$