Exercise 6.4

1. Express each of the following as a trigonometric ratio of an acute angle.

(a) $\cos 170°$ (b) $\sin (-38°)$ (c) $\tan 320°$ (d) $\sin 115°$

(e) $\tan (-100°)$ (f) $\cot 317°$ (g) $\sec 199°$ (h) $\cos (-235°)$

2. Express each of the following as a trigonometric ratio of an acute angle.

(a) $\tan \frac{5\pi}{8}$ (b) $\sin (-\frac{2}{5}\pi)$ (c) $\cot \frac{7\pi}{6}$ (d) $\sin \frac{17\pi}{10}$

(e) $\cos (-\frac{8\pi}{5})$ (f) $\tan (-\frac{7\pi}{4})$ (g) $\sec \frac{8\pi}{15}$ (h) $\operatorname{cosec} \frac{12\pi}{7}$

3. Express each of the following as a trigonometric ratio of an acute angle.

(a) $\sin 425°$ (b) $\cos 515°$ (c) $\tan 700°$

(d) $\sec \frac{19\pi}{7}$ (e) $\operatorname{cosec} \frac{13\pi}{4}$ (f) $\cot \frac{29\pi}{8}$

4. Without using tables or calculators, find the value of each of the following.

(a) $\sin 120°$ (b) $\cot 30°$ (c) $\cos (-210°)$ (d) $\tan (-45°)$

(e) $\sec (-112°)$ (f) $\sin (-300°)$ (g) $\operatorname{cosec} 210°$ (h) $\sec 750°$

5. Evaluate each of the following, giving your answers correct to 3 decimal places.

(a) $\sin 222°$ (b) $\cos (-87°)$ (c) $\tan 176°$

(d) $\sec (-112°)$ (e) $\operatorname{cosec} 136°$ (f) $\cot (-217°)$

6. Evaluate each of the following, giving your answers correct to 3 decimal places.

(a) $\cos \frac{5\pi}{7}$ (b) $\sin (-\frac{8\pi}{5})$ (c) $\tan \frac{9\pi}{4}$

(d) $\cot (-\frac{7\pi}{6})$ (e) $\sec \frac{12\pi}{7}$ (f) $\operatorname{cosec} \frac{11\pi}{5}$

Exercise 6.4

1. (a) $-\cos 10°$ (b) $-\sin 38°$ (c) $-\tan 40°$
(d) $\sin 65°$ (e) $\tan 80°$ (f) $-\cot 43°$
(g) $-\sec 19°$ (h) $-\cos 55°$

2. (a) $-\tan \frac{3\pi}{8}$ (b) $-\sin \frac{2\pi}{5}$ (c) $\cot \frac{\pi}{6}$
(d) $-\sin \frac{3\pi}{10}$ (e) $\cos \frac{2\pi}{5}$ (f) $\tan \frac{\pi}{4}$
(g) $-\sec \frac{7\pi}{15}$ (h) $-\operatorname{cosec} \frac{2\pi}{7}$

3. (a) $\sin 65°$ (b) $-\cos 25°$ (c) $-\tan 20°$
(d) $-\sec \frac{2\pi}{7}$ (e) $-\operatorname{cosec} \frac{\pi}{4}$ (f) $-\cot \frac{3\pi}{8}$

4. (a) $\frac{\sqrt{3}}{2}$ (b) $\sqrt{3}$ (c) $-\frac{\sqrt{3}}{2}$
(d) -1 (e) $-\frac{1}{\sqrt{2}}$ (f) $\frac{\sqrt{3}}{2}$
(g) -2 (h) $\frac{2}{\sqrt{3}}$

5. (a) -0.669 (b) 0.052 (c) -0.070
(d) -2.669 (e) 1.440 (f) -1.327

6. (a) -0.623 (b) 0.951 (c) 1
(d) -1.732 (e) 1.604 (f) 1.701