**2CP HW Practice *Composition of Functions***

**For each pair of functions, find *f* ◦ *g* and *g* ◦ *f,* if they exist.**

 **1.** *f* = {(–9, –1), (–1, 0), (3, 4)} **2.** *f* = {(–4, 3), (0, –2), (1, –2)}

 *g* = {(0, –9), (–1, 3), (4, –1)} *g* = {(–2, 0), (3, 1)}

 **3.** *f* = {(–4, –5), (0, 3), (1, 6)} **4.** *f* = {(0, –3), (1, –3), (6, 8)}

 *g* = {(6, 1), (–5, 0), (3, –4)} *g* = {(8, 2), (–3, 0), (3, 1)}

**Find [*g* ◦ *h*](*x*) and [*h* ◦ *g*](*x*), if they exist.**

**5.** *g*(*x*) = 3*x* **6.** *g*(*x*) = –8*x*  **7.** *g*(*x*) = *x* + 6

 *h*(*x*) = *x* – 4 *h*(*x*) = 2*x* + 3 *h*(*x*) = 3$x^{2}$

 **8.** *g*(*x*) = *x* + 3 **9.** *g*(*x*) = –2*x* **10.** *g*(*x*) = *x* – 2

 *h*(*x*) = 2$x^{2}$ *h*(*x*) = $x^{2}$ + 3*x* + 2 *h*(*x*) = 3$x^{2}$ + 1

**If *f*(*x*) =** $x^{2}$**, *g*(*x*) = 5*x*, and *h*(*x*) = *x* + 4, find each value.**

**11.** *f*[*g*(1)] **12.** *g*[*h*(–2)] **13.** *h*[*f*(4)]

**14.** *f*[*h*(–9)] **15.** *h*[*g*(–3)] **16.** *g*[*f*(8)]

**17.** *g*[*h*(–2)] **18.** *h*[*f*(5)] **19.** *f*[*g*(–4)]

**20.** *f*[*g*(–1)] **21.** *g*[*h*(3)] **22.** *h*[*g*(7)]

**23.** [*g* ◦ (*f* ◦ *h*)](–1) **24.** [*h* ◦ (*g* ◦ *f*)](0) **25.** [*f* ◦ (*h* ◦ *g*)](2)

**26. MEASUREMENT** The formula *f* = $\frac{n}{12}$ converts inches *n* to feet *f*, and *m* = $\frac{f}{5280}$ converts feet to miles *m*.
Write a composition of functions that converts inches to miles.