Chapter 6 Review Extra Practice Answers

1. a) 4
b) -1
c) 8
d) positive

2. period: 785.40 m; amplitude: 125 m; equation of the axis: $y = 135$ m

3. The period, amplitude, and equation of the axis all differ for the two graphs.

4. a) $f(x) = \sin(x - 70°)$
b) $f(x) = \sin x - 33$
c) $f(x) = \sin(x + 1.5°)$
d) $f(x) = \sin x + 51$
e) $f(x) = \sin(x - 61°) - 45$
f) $f(x) = \sin(x + 78°) + 38$

5. a) amplitude: $\frac{18}{19}$; period: 360°; equation of the axis: $y = 39$; $D = \{x \in \mathbf{R}\}$;

$$R = \left\{y \in \mathbf{R} \mid 38\frac{1}{19} \leq y \leq 39\frac{18}{19}\right\}$$

b) amplitude: 80; period: 360°; equation of the axis: $y = -29$;
$D = \{x \in \mathbf{R}\}$; $R = \{y \in \mathbf{R} \mid -109 \leq y \leq 51\}$

c) amplitude: $\frac{1}{44}$; period: 360°; equation of the axis: $y = -44$; $D = \{x \in \mathbf{R}\}$;

$$R = \left\{y \in \mathbf{R} \mid -44\frac{1}{44} \leq y \leq -43\frac{43}{44}\right\}$$

d) amplitude: 26.5; period: 360°; equation of the axis: $y = -26.5$; $D = \{x \in \mathbf{R}\}$;
$R = \{y \in \mathbf{R} \mid -53 \leq y \leq 0\}$

e) amplitude: $\frac{5}{7}$; period: 360°; equation of the axis: $y = 5$; $D = \{x \in \mathbf{R}\}$;

$$R = \left\{y \in \mathbf{R} \mid 4\frac{2}{7} \leq y \leq 5\frac{5}{7}\right\}$$

f) amplitude: 99; period: 360°; equation of the axis: $y = 97$; $D = \{x \in \mathbf{R}\}$;
$R = \{y \in \mathbf{R} \mid -2 \leq y \leq 196\}$

6. a) No, the transformations have not been applied in the correct order.
b) No, the transformations have not been applied in the correct order.
c) Yes, the transformations have been applied in the correct order.
d) Yes, the transformations have been applied in the correct order.
e) No, the transformations have not been applied in the correct order.