Lesson 6.5 Extra Practice Answers

1. a) horizontal translation of $68°$ to the left; reflection in the x-axis; vertical stretch by a factor of 7; vertical translation of 12 units down

b) horizontal compression by a factor of $\frac{1}{3}$; horizontal translation of $19°$ to the right; vertical compression by a factor of $\frac{1}{3}$

c) horizontal stretch by a factor of 15; horizontal translation of $88°$ to the left; vertical translation of 6 units up

d) horizontal translation of $34°$ to the right; vertical stretch by a factor of 8; vertical translation of 22 units down

e) horizontal stretch by a factor of 7; horizontal translation of $8°$ to the left; reflection in the x-axis; vertical stretch by a factor of 17

f) horizontal compression by a factor of $\frac{1}{41}$; horizontal translation of $31°$ to the right; reflection in the x-axis; vertical translation of 14 units up

2. a) ii
b) iii
c) i
d) iv

3. a) $9°$ to the left
b) $30°$ to the right
c) $160°$ to the left
d) $45°$ to the right
e) $20°$ to the right
f) $90°$ to the left

4. a) period: $180°$; amplitude: 29; equation of the axis: $f = -3$; $D = \{x \in \mathbf{R} \mid 0 \le x \le 720\}$; $R = \{f \in \mathbf{R} \mid -32 \le f \le 26\}$

b) period: $36°$; amplitude: $\frac{1}{20}$; equation of the axis: $g = 9$; $D = \{x \in \mathbf{R} \mid 0 \le x \le 144\}$; $R = \{\{g \in \mathbf{R} \mid 8\frac{19}{20} \le g \le 9\frac{1}{20}\}$

c) period: $1800°$; amplitude: 6; equation of the axis: $f = 55$; $D = \{x \in \mathbf{R} \mid 0 \le x \le 7200\}$; $R = \{f \in \mathbf{R} \mid 49 \le f \le 61\}$

d) period: $20°$; amplitude: 1; equation of the axis: $g = -12$; $D = \{x \in \mathbf{R} \mid 0 \le x \le 80\}$; $R = \{g \in \mathbf{R} \mid -13 \le g \le -11\}$

e) period: $2880°$; amplitude: 3; equation of the axis: $f = 4$; $D = \{x \in \mathbf{R} \mid 0 \le x \le 11\,520\}$; $R = \{f \in \mathbf{R} \mid 1 \le f \le 7\}$

f) period: $72°$; amplitude: 0.5; equation of the axis: $g = -1.5$; $D = \{x \in \mathbf{R} \mid 0 \le x \le 288\}$; $R = \{g \in \mathbf{R} \mid -2 \le g \le -1\}$

5. a) No
b) Yes
c) Yes
d) No