

Chapter 1 Review Extra Practice Answers

1. a) Not a function, $D = \{0, 1, 2, 3\}$
 $R = \{-9, -8, -5, -4, 0\}$
 b) Function, $D = \{-2, -1, 0, 1, 2\}$
 $R = \{0, 1, 2\}$
 c) Function, $D = \{2, 4, 6, 8, 10\}$
 $R = \{-6, -3, 0\}$
 d) Function, $D = \{5, 15, 25, 35, 45\}$
 $R = \{10\}$
 e) Not a function, $D = \{12\}$
 $R = \{-10, -5, 0\}$
 f) Function, $D = \{-0.2, -0.1, 0, 0.1, 0.2\}$
 $R = \{1, 2, 3\}$
2. a) $D = \{x \in \mathbf{R}\}$
 $R = \{y \in \mathbf{R} \mid y \geq 0\}$
 b) $D = \{x \in \mathbf{R}\}$
 $R = \{y \in \mathbf{R} \mid y \leq -4\}$
 c) $D = \{x \in \mathbf{R}\}$
 $R = \{y \in \mathbf{R} \mid y \geq 0\}$
 d) $D = \{x \in \mathbf{R}\}$
 $R = \{y \in \mathbf{R} \mid y \leq 7\}$
 e) $D = \{x \in \mathbf{R}\}$
 $R = \{y \in \mathbf{R} \mid y \geq 8\}$
 f) $D = \{x \in \mathbf{R}\}$
 $R = \{y \in \mathbf{R} \mid y \geq -3.5\}$
3. a) $y = \frac{1}{x}$
 b) $y = x^2, y = |x|$
 c) $y = \sqrt{x}, y = x^2, y = |x|$
 d) $y = 2^x$
 e) $y = x, y = x^2, y = |x|, y = \sin x, y = \sqrt{x}$
 f) $y = \sqrt{x}$
4. a) Compress horizontally by a factor of $\frac{1}{2}$. Translate right 4 units and translate up 2 units.
 b) Reflect in the x -axis and stretch vertically by a factor of 3. Reflect in y -axis. Translate left 1 unit.
 c) Compress horizontally by a factor of $\frac{1}{5}$. Translate right 3 units and translate up 5 units.
 d) Reflect in x -axis. Translate down 12 units.
 e) Reflect in x -axis and stretch vertically by a factor of 4. Compress horizontally by a factor of $\frac{1}{6}$. Translate down 11 units.
 f) Reflect in x -axis and y -axis. Translate left 2 units and down 1 unit.
5. a) $y = \frac{x+7}{2}$
 b) $y = \frac{3}{x} - 4$
 c) $y = \pm\sqrt{x^2 - 3}$
 d) $y = \sqrt[3]{x-1}$
 e) $y = \pm\sqrt{5x+15}$
6. a) $\frac{1}{9}$
 b) 5
 c) $\frac{1}{243}$
 d) 3
 e) -45
 f) $\frac{1}{27}$
7. a) $\left\{ \left(0, -\frac{7}{2}\right), (3, 12) \right\}$
 b) $\left\{ \left(-1, \frac{17}{4}\right), \left(0, \frac{7}{2}\right), (4, -2) \right\}$
 c) $\{(0, -7), (5, -1)\}$
 d) $\{(0, -12), (5, 30)\}$
 e) $\left\{ (-1, 1), \left(0, \frac{3}{2}\right), (4, 1) \right\}$
 f) $\{(0, 4), (5, 55)\}$