| Parent <br> Function | $f(x)=x$ | $g(x)=x^{2}$ | $h(x)=\frac{1}{x}$ | $k(x)=\|x\|$ |
| :---: | :---: | :---: | :---: | :---: |
| Sketch |  |  |  |  |
| Domain | $\{x \in \mathbb{R}\}$ | $\{x \in \mathbb{R}\}$ | $\{x \in \mathbb{R}, x \neq 0\}$ | $\{x \in \mathbb{R}\}$ |
| Range | $\{y \in \mathbb{R}\}$ | $\{y \in \mathbb{R}, y \geq 0\}$ | $\{y \in \mathbb{R}, y \neq 0\}$ | $\{y \in \mathbb{R}, y \geq 0\}$ |
| Intervals of Increase | $(-\infty, \infty)$ | $(0, \infty)$ | none | $(0, \infty)$ |
| Intervals of Decrease | none | $(-\infty, 0)$ | $(-\infty, 0),(0, \infty)$ | $(-\infty, 0)$ |
| Location of Discontinuities | none | none | $x=0$ | none |
| x -intercepts | 0 | 0 | none | 0 |
| y-intercepts | 0 | 0 | none | 0 |
| Symmetry | odd | even | odd | even |
| End <br> Behaviours | $\begin{gathered} \text { as } x \rightarrow \infty, y \rightarrow \infty \\ \text { as } x \rightarrow-\infty, y \rightarrow-\infty \end{gathered}$ | $\begin{gathered} \text { as } x \rightarrow \infty, y \rightarrow \infty \\ \text { as } x \rightarrow-\infty, y \rightarrow \infty \end{gathered}$ | $\begin{gathered} \text { as } x \rightarrow \infty, y \rightarrow 0 \\ \text { as } x \rightarrow-\infty, y \rightarrow 0 \end{gathered}$ | $\begin{gathered} \text { as } x \rightarrow \infty, y \rightarrow \infty \\ \text { as } x \rightarrow-\infty, y \rightarrow \infty \end{gathered}$ |


| Parent Function | $m(x)=\sqrt{x}$ | $p(x)=2^{x}$ | $r(x)=\sin x$ | $u(x)=x^{3}$ |
| :---: | :---: | :---: | :---: | :---: |
| Sketch |  |  |  |  |
| Domain | $\{x \in \mathbb{R}, x \geq 0\}$ | $\{x \in \mathbb{R}\}$ | $\{x \in \mathbb{R}\}$ | $\{x \in \mathbb{R}\}$ |
| Range | $\{y \in \mathbb{R}, y \geq 0\}$ | $\{y \in \mathbb{R}, y>0\}$ | $\{y \in \mathbb{R},-1 \leq y \leq 1\}$ | $\{y \in \mathbb{R}\}$ |
| Intervals of Increase | $[0, \infty)$ | $(-\infty, \infty)$ | $\begin{gathered} \left(-90^{\circ}+360^{\circ} k, 90^{\circ}+360^{\circ} k\right) \\ k \in \mathbb{Z} \end{gathered}$ | $(-\infty, 0),(0, \infty)$ |
| Intervals of Decrease | none | none | $\begin{gathered} \left(90^{\circ}+360^{\circ} k, 270^{\circ}+360^{\circ} k\right) \\ k \in \mathbb{Z} \end{gathered}$ | none |
| Location of Discontinuities | none | none | none | none |
| x -intercepts | 0 | none | $180^{\circ} k, k \in \mathbb{Z}$ | 0 |
| $y$-intercepts | 0 | 1 | 0 | 0 |
| Symmetry | none | none | odd | odd |
| End Behaviours | as $x \rightarrow \infty, y \rightarrow \infty$ | $\begin{gathered} \text { as } x \rightarrow \infty, y \rightarrow \infty \\ \text { as } x \rightarrow-\infty, y \rightarrow 0 \end{gathered}$ | not applicable | $\begin{gathered} \text { as } x \rightarrow \infty, y \rightarrow \infty \\ \text { as } x \rightarrow-\infty, y \rightarrow-\infty \end{gathered}$ |

