# EXTRA PRACTICE - Exercises 

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## Unit I - The Structure of Mathematics <br> Part E - Mathematical Model Lesson 2 - The Mathematics of Functions

For each of the following, use the idea of domain and range to find an open phrase which defines a function.

1. For a Domain

$$
\mathrm{D}=\{0,1,2\}
$$

and a Range

$$
\mathrm{R}=\{-1,1,3\}
$$

2. For a Domain
$\mathrm{D}=\{-2,0,3,5\}$
and a Range
$R=\{-7,-5,-2,0\}$
3. For a Domain
$\mathrm{D}=\{0,2,4,6\}$
and a Range
$R=\{0,4,16,36\}$
4. For a Domain
$\mathrm{D}=\{-3,0,1,3\}$
and a Range
$R=\{1,7,9,13\}$

For the given function and domain in each of the following, find the range.
5. $f(\quad)=\frac{(\quad)}{(\quad)+12}$

For the Domain $D=\{0,6,6,12,-12\}$
6. $\mathrm{f}(\mathrm{r})=0.8[200-(\quad)] \quad$ For the Domain $\mathrm{D}=\{80,100,175\}$

Note: The handicap of a bowler when his average is in the given domain
7. $f(\quad)=8[(\quad)-2]+7(\quad$ For the Domain $D=\{-2,0,1,2\}$
8. $\mathrm{f}(\quad)=5[2(\quad)-3]+5(\quad) \quad$ For the Domain $D=\{-6,2,2,6\}$
9. $\mathrm{f}(\quad)=5(\quad)-(\quad)^{2} \quad$ For the Domain $\mathrm{D}=\{5,0,5,10\}$
10. $\mathrm{f}(\quad)=\frac{3(\quad)}{()^{2}-16} \quad$ For the Domain $\mathrm{D}=\{-4,2,0,4\}$

## Unit I - The Structure of Mathematics Part E - Mathematical Model Lesson 2 - The Mathematics of Functions

For each of the following, use the idea of domain and range to find an open phrase which defines a function.

1. For a Domain $\mathrm{D}=\{0,1,2\}$ and a Range $\mathrm{R}=\{-1,1,3\} \quad \mathrm{f}(n)=2 n-1$
2. For a Domain $\mathrm{D}=\{-2,0,3,5\}$ and a Range $\mathrm{R}=\{-7,-5,-2,0\} \quad \mathrm{f}(n)=n-5$
3. For a Domain $\mathrm{D}=\{0,2,4,6\}$ and a Range $\mathrm{R}=\{0,4,16,36\} \quad \mathrm{f}(n)=n \cdot n$ or $n^{2}$
4. For a Domain $\mathrm{D}=\{-3,0,1,3\}$ and a Range $\mathrm{R}=\{1,7,9,13\} \quad \mathrm{f}(n)=2 n+7$

For the given function and domain in each of the following, find the range.
5. $\mathrm{f}(\quad)=\frac{(\mathrm{r}}{(\mathrm{r})+12} \quad$ For the Domain $\mathrm{D}=\{0,6,-6,12,-12\} \quad \mathrm{R}=\left\{0, \frac{1}{3},-1,1 / 2,\right\}$
6. $f(\quad)=0.8[200-(\quad)] \quad$ For the Domain $D=\{80,100,175\} \quad R=\{96,80,20\}$

Note: The handicap of a bowler when his average is in the given domain
7. $f(\quad)=8[(\quad)-2]+7(\quad)$ For the Domain $D=\{-2,0,1,2\} \quad R=\{-46,-16,-1,14\}$
8. $f(\quad)=5[2(\quad)-3]+5(\quad)$ For the Domain $D=\{-6,2,2,6\} \quad R=\{-105,-45,15,75\}$
9. $f(\quad)=5(\quad)-(\quad)^{2} \quad$ For the Domain $D=\{-5,0,5,10\} \quad R=\{-50,0,0,-50\}$
10. $\mathrm{f}(\mathrm{f})=\frac{3(\mathrm{r}}{()^{2}-16} \quad$ For the Domain $\mathrm{D}=\{-4,2,0,4\} \quad \mathrm{R}=\{-1 / 3,0\}$

