**1. Complete the following statement.**

|  |  |
| --- | --- |
| **a.** | The range of the \_\_\_\_\_\_\_\_\_\_\_\_\_relation is the domain of the \_\_\_\_\_\_\_\_\_\_\_\_relation, and the range of the \_\_\_\_\_\_\_\_\_\_\_\_\_relation is the domain of the \_\_\_\_\_\_\_\_\_\_\_\_\_ relation. |
| **b.** | The graphs of the function and the inverse function are reflections across the line $\\_\\_\\_\\_\\_\\_\\_\\_\\_$. |
| **c.** | If a function$ f$ is \_\_\_\_\_\_\_\_\_\_\_\_, it has an inverse function $f^{-1}$ |

**2. Write T for true or F for false**

|  |  |  |
| --- | --- | --- |
| **a.** | $$f^{-1}\left(x\right)=\frac{1}{f\left(x\right)}$$ |  |
| **b.** | $f\left(f^{-1}\left(x\right)\right)=x$ **and** $ f^{-1}\left(f\left(x\right)\right)=x$ |  |

**Multiple Choices**

**3.** **If** $f\left(x\right)=4x$ **and** $g\left(x\right)=\frac{x}{4}, $**then**$ \left(f∘g\right)\left(x\right)$ **is:**

|  |  |  |
| --- | --- | --- |
| **a.** | $$2x$$ |  |
| **b.** | $$x^{2}$$ |  |
| **c.** | $$x$$ |  |

**4. If** $ f\left(x\right)=x+3$**, the value of** $f^{-1}\left(-2\right)$ **is:**

|  |  |  |
| --- | --- | --- |
| **a.** | $$1$$ |  |
| **b.** | $$-5$$ |  |
| **c.** | $$-1$$ |  |

**5. If** $f\left(x\right)=\frac{x-2}{5}$ **and** $g\left(x\right)=5x+2$**, then**$ \left(f∘g\right)\left(6\right)$ **is:**

|  |  |  |
| --- | --- | --- |
| **a.** | $$1$$ |  |
| **b.** | $$6$$ |  |
| **c.** | $$-2$$ |  |

**ANSWERS**

**1. Complete the following statement.**

|  |  |
| --- | --- |
| **a.** | The range of the original relation is the domain of the inverse relation, and the range of the inverse relation is the domain of the original relation. |
| **b.** | The graphs of the function and the inverse function are reflections across the line y=x. |
| **c.** | If a function$ f$ is one-to-one, it has an inverse function $f^{-1}$ |

**2. Write T for true or F for false**

|  |  |  |
| --- | --- | --- |
| **a.** | $$f^{-1}\left(x\right)=\frac{1}{f\left(x\right)}$$ | **F** |
| **b.** | $f\left(f^{-1}\left(x\right)\right)=x$ **and** $ f^{-1}\left(f\left(x\right)\right)=x$ | **T** |

**Multiple Choices**

**3.** **If** $f\left(x\right)=4x$ **and** $g\left(x\right)=\frac{x}{4}, $**then**$ \left(f∘g\right)\left(x\right)$ **is:**

|  |  |  |
| --- | --- | --- |
| **a.** | $$2x$$ |  |
| **b.** | $$x^{2}$$ |  |
| **c.** | $$x$$ |  |

**4. If** $ f\left(x\right)=x+3$**, the value of** $f^{-1}\left(-2\right)$ **is:**

|  |  |  |
| --- | --- | --- |
| **a.** | $$1$$ |  |
| **b.** | $$-5$$ |  |
| **c.** | $$-1$$ |  |

**5. If** $f\left(x\right)=\frac{x-2}{5}$ **and** $g\left(x\right)=5x+2$**, then**$ \left(f∘g\right)\left(6\right)$ **is:**

|  |  |  |
| --- | --- | --- |
| **a.** | $$1$$ |  |
| **b.** | $$6$$ |  |
| **c.** | $$-2$$ |  |