**Name the property of real numbers used in each equation. Then find the value of** $x$**.**

|  |  |
| --- | --- |
|  | $$8x=5⋅8$$ |
|  | $$\frac{2}{5}⋅x=1$$ |
|  | $$3+\left(2+8\right)=6+x$$ |

**Evaluate each expression if**$ x=4$ **,** $y=3$ **and** $z=6$**. (Name the property used in each step.)**

|  |  |
| --- | --- |
|  | $$6x+2\left(2x+7\right)$$ |
|  | $$\frac{x}{y}+\frac{2}{x}\left(z+2y\right)+z$$ |

**ANSWER**

**Name the property of real numbers used in each equation. Then find the value of** $x$**.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | $$8x=5⋅8$$ | $$x=5$$ | Commutative property of multiplication |
|  | $$\frac{2}{5}⋅x=1$$ | $$x=\frac{5}{2}$$ | Multiplicative inverse property |
|  | $$3+\left(2+8\right)=6+x$$ | $$x=8$$ | Associative property of addition |

**Evaluate each expression if**$ x=4$ **,** $y=3$ **and** $z=6$**. (Name the property used in each step.)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | $$6x+2\left(2x+7\right)$$ | $$=6\left(4\right)+2\left(2\left(4\right)+7\right)$$ | **Substitution** |
|  |  | $$=24+2\left(8+7\right)$$ | **Multiply** |
|  |  | $$=24+2\left(15\right)$$ | **Add** |
|  |  | $$=24+30$$ | **Multiply** |
|  |  | $$=54$$ | **Add** |

|  |  |  |  |
| --- | --- | --- | --- |
|  | $$\frac{x}{y}+\frac{2}{x}\left(z+2y\right)+z$$ | $$=\frac{4}{3}+\frac{2}{4}\left(6+2\left(3\right)\right)+6$$ | **Substitution** |
|  |  | $$=\frac{4}{3}+\frac{2}{2⋅2}\left(6+6\right)+6$$ | **Multiply & Symmetric** |
|  |  | $$=\frac{4}{3}+\frac{1}{2}\left(12\right)+6$$ | **Addition & multiplicative inverse** |
|  |  | $$=\frac{4}{3}+\frac{1}{2}\left(6⋅2\right)+6$$ | **Symmetric** |
|  |  | $$=\frac{4}{3}+6+6$$ | **multiplicative inverse** |
|  |  | $$=\frac{4}{3}+12$$ | **Add** |
|  |  | $$=\frac{4}{3}+\frac{36}{3}$$ | **LCD** |
|  |  | $$=\frac{40}{3}$$ | **Add** |