

1. Use the properties of equality to complete the justification to the equation.

Statements	Reasons
$\frac{m}{3} - 5 = 17$	Given equation
$\frac{m}{3} - 5 + 5 = 17 + 5$	
$\frac{m}{3} = 22$	Simplify
$\frac{m}{3} \cdot 3 = 17 \cdot 3$	
$m = 51$	Simplify

2. Use the properties of equality to complete the justification to the equation.

Given: $15y + 7 = 12 - 20y$

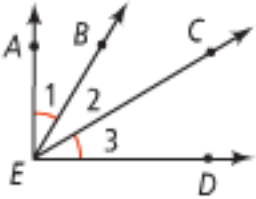

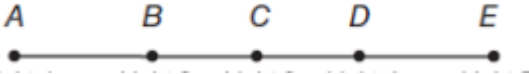
Conclusion: $y = \frac{1}{7}$

Statement	Reason
1. $15y + 7 = 12 - 20y$	1.
2. $35y + 7 = 12$	2.
3. $35y = 5$	3.
4. $y = \frac{1}{7}$	4.

3. Use the given property or properties of equality to fill in the blank. x , y , and z are real numbers.

- Symmetric: If $x = 3$, then _____.
- ☐ Transitive: If $y = 12$ and $x = y$, then _____.
- ☐ Symmetric: If $x + y = y + z$, then _____.
- ☐ Transitive: If $AB = 5$ and $AB = CD$, then _____.
- ☐ Substitution: If $x = y - 7$ and $x = z + 4$, then _____.

4. Use a property of equality to justify each of the following statements.

 <p>If $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$, then $m\angle 1 = m\angle 3$.</p>	 <p>If $AB = CD$, then $CD = AB$.</p>
<p>If $m\angle 2 = m\angle 3$ and $m\angle 3 = m\angle 1$ then $m\angle 2 = m\angle 1$.</p>	 <p>If $BC = \frac{1}{2}BD$, then $2 \cdot BC = BD$.</p>

5. Fill in the blanks in the table.

Property	In symbols
Reflexive property of equality	
	If $a = b$, then $b = a$.
Addition property of equality	
	If $a = b$ and $c \neq 0$, then $a \div c = b \div c$.
Subtraction property of equality	