Name the property of equality that the statement illustrates.

7. If $m\angle 6 = m\angle 7$, then $m\angle 7 = m\angle 6$.

8. $34° = 34°$

9. $m\angle 1 = m\angle 2$ and $m\angle 2 = m\angle 5$. So, $m\angle 1 = m\angle 5$.

Name the property of equality that the statement illustrates.

7. If $m\angle 6 = m\angle 7$, then $m\angle 7 = m\angle 6$.

Symmetric Property of Equality

8. $34° = 34°$

Reflexive Property of Equality

9. $m\angle 1 = m\angle 2$ and $m\angle 2 = m\angle 5$. So, $m\angle 1 = m\angle 5$.

Transitive Property of Equality

Hide Answers

Name the property of equality that the statement illustrates.

10. If $JK = KL$ and $KL = 16$, then $JK = 16$.

11. $PQ = ST$, so $ST = PQ$.

12. $ZY = ZY$

10. If $JK = KL$ and $KL = 16$, then $JK = 16$. Transitive Property of Equality

11. $PQ = ST$, so $ST = PQ$. Symmetric Property of Equality

12. $ZY = ZY$ Reflexive Property of Equality

State the Property of Equality each statement illustrates.

a. If $AB = CD$, then $AB + FE = CD + FE$.

b. If $m\angle 2 = m\angle 4$ and $m\angle 4 = m\angle 6$, then $m\angle 2 = m\angle 6$.

c. If $XY = AB$, then $AB = XY$.

a. If $AB = CD$, then $AB + FE = CD + FE$.
Addition Property of Equality

b. If $m\angle 2 = m\angle 4$ and $m\angle 4 = m\angle 6$, then $m\angle 2 = m\angle 6$.
Transitive Property of Equality

c. If $XY = AB$, then $AB = XY$.
Symmetric Property of Equality

Solve the equation. Justify each step.

5. $4 = -10b + 6(2 - b)$

6. Solve the formula $A = \frac{1}{2}bh$ for b. Justify each step. Then find the base of a triangle whose area is 952 square feet and whose height is 56 feet.

5. $4 = -10b + 6(2 - b)$

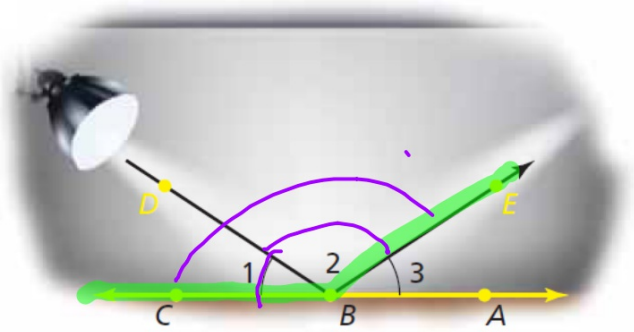
Equation	Explanation and Reason
$4 = -10b + 6(2 - b)$	Write the equation; Given
$4 = -10b + 12 - 6b$	Multiply; Distributive Property
$4 = -16b + 12$	Combine like terms; Simplify.
$-8 = -16b$	Subtract 12 from each side; Subtraction Property of Equality
$\frac{1}{2} = b$	Divide each side by -16; Division Property of Equality
$b = \frac{1}{2}$	Rewrite the equation; Symmetric Property of Equality

6. Solve the formula $A = \frac{1}{2}bh$ for b. Justify each step. Then find the base of a triangle whose area is 952 square feet and whose height is 56 feet.

Equation	Explanation and Reason
$A = \frac{1}{2}bh$	Write the equation; Given
$2A = bh$	Multiply each side by 2; Multiplication Property of Equality
$\frac{2A}{h} = b$	Divide each side by h; Division Property of Equality
$b = \frac{2A}{h}$	Rewrite the equation; Symmetric Property of Equality

$b = 34$ feet

You reflect the beam of a spotlight off a mirror lying flat on a stage, as shown. Determine whether $m\angle DBA = m\angle EBC$.



SOLUTION

Equation	Explanation	Reason
$m\angle 1 = m\angle 3$	Marked in diagram.	Given
$m\angle DBA = m\angle 3 + m\angle 2$	Add measures of adjacent angles.	Angle Addition Postulate (Post. 1.4)
$m\angle DBA = m\angle 1 + m\angle 2$	Substitute $m\angle 1$ for $m\angle 3$.	Substitution Property of Equality
$m\angle 1 + m\angle 2 = m\angle EBC$	Add measures of adjacent angles.	Angle Addition Postulate (Post. 1.4)
$m\angle DBA = m\angle EBC$	Both measures are equal to the sum $m\angle 1 + m\angle 2$.	Transitive Property of Equality