

Handout 3: Prove and Improve - Answers

For problems 1-5, $A = B$, $C = D$, $E = F$, $G = H$, and $H \neq 0$.

1. What allows us to say that $AC = BC$?
Multiplication Property

2. What allows us to say that $AD = BC$?
Substitution Property

3. What allows us to say that $AD + E = BC + F$?
Addition Property and Substitution Property

4. What allows us to say that $\frac{AD+E}{G} = \frac{BC+F}{G}$?
Division Property

5. What allows us to say that $\frac{AD+E}{G} = \frac{BC+F}{H}$?
Substitution Property

For questions 6- 10, it is given that $3(x - 2)^2 = 12$ and $\frac{1}{2}x^2y^2 = 72$.

6. What must we do to $3(x - 2)^2 = 12$ to get $(x - 2)^2 = 4$?
Divide both sides by 3

7. What will we get when we solve $(x - 2)^2 = 4$ for x ?
 $x = 4$.

8. What must we do to $\frac{1}{2}x^2y^2 = 72$ in order to get $x^2y^2 = 144$?
Multiply both sides by 2

9. If we substitute our answer for x into the equation, what will we get?
 $16y^2 = 144$

10. Simplifying the remaining equation, what will be our value of y ?
 $y = 3$