Objective: TSWBAT solve one step equations using multiplication and division

Key Concepts

Division Property of Equality

If you divide each side of an equation by the same nonzero number, the two sides remain equal.

Arithmetic	Algebra
$4 \times 2 = 8$,	If $a = b$ and $c \neq 0$,
so $4 \times 2 \div 2 = 8 \div 2$.	then $a \div c = b \div c$.

1 EXAMPLE Solving Equations by Dividing

Solve $4n = 68$.

$4n \div 4 = 68 \div 4$ ← Divide each side by 4 to undo the multiplication and get n alone on one side.

$n = 17$ ← Simplify.

Check

$4n = 68$ ← Check your solution in the original equation.

$4 \times 17 \stackrel{?}{=} 68$ ← Replace n with 17.

$68 = 68$ ✓

Key Concepts

Multiplication Property of Equality

If you multiply each side of an equation by the same number, the two sides remain equal.

Arithmetic	Algebra
$6 \div 2 = 3$, so $(6 \div 2) \times 2 = 3 \times 2$.	If $a = b$, then $a \cdot c = b \cdot c$.

3 EXAMPLE Solving Equations by Multiplying

Solve $y \div 6.4 = 8$.

$y \div 6.4 \times 6.4 = 8 \times 6.4$ ← Multiply by 6.4 to undo the division and get y alone.

$y = 51.2$ ← Simplify.

Solve Each equation

① $3g = 36$ ② $T \div 8 = 2$ ③ $h \div 7 = 21$

④ $18 = 3m$ ⑤ $6a = 18$ ⑥ $36 \div r \div 9$

① $\frac{3g}{3} = \frac{36}{3}$

$g = 12$

② $T \div 8 = 2$ (8) (8)

$T = 16$

③ $h \div 7 = 21$ (7) (7)

$h = 147$

④ $\frac{18}{3} = \frac{3m}{3}$

$6 = m$

⑤ $\frac{6a}{6} = \frac{18}{6}$

$a = 3$

⑥ $36 = r \div 9$ (9) (9)

$324 = r$

9. $23n = 115$

$\frac{23}{23} \quad \frac{23}{23}$ $N=5$

10. $z \div 9 = 9$

(9) (9)

$z=81$

11. $48 = 12h$

$\frac{12}{12} \quad \frac{12}{12}$ $h=4$

12. $10w = 150$

$\frac{10}{10} \quad \frac{10}{10}$ $W=15$

13. $34 = t \div 14$

(14) (14)

$T=476$

14. $105 = 21t$

$\frac{21}{21} \quad \frac{21}{21}$ $T=5$

15. $64 = e \div 9$

(9) (9)

$e=576$

16. $8v = 32$

$\frac{8}{8} \quad \frac{8}{8}$ $V=4$

17. $22 = t \div 4$

(4) (4)

$88=T$

18. $3s = 66$

$\frac{3}{3} \quad \frac{3}{3}$ $s=22$

19. $21 = b \div 2$

(2) (2)

$42=b$

20. $15n = 45$

$\frac{15}{15} \quad \frac{15}{15}$ $N=3$

Homework: p. 97, 1-28