

Algebra

Skill 4 - 3H

Use Related Equations: Multiply and Divide

Multiplication and division are opposite or inverse *operations*. A fact family is a set of related multiplication and division equations that use the same numbers.

This is the fact family for 3, 7, 21

$$7 \times 3 = 21$$

$$21 \div 3 = 7$$

$$3 \times 7 = 21$$

$$21 \div 7 = 3$$

Example

Find the value of the variable. Use the inverse operation to write a related equation.

$b \times 2 = 8$ $4 \times 2 = 8$ $b = 4$	Use the inverse operation (division) to write a related equation. $8 \div 2 = 4$
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Notice that the quotient of the related division equation is the value of the variable in the multiplication equation.

Directions: Find the value of the variable. Then, write a related equation. The first one is done for you.

1. $3 \times a = 12$ $3 \times 4 = 12$ $a = 4$	write a related equation. $12 \div 3 = 4$	2. $2 \times n = 6$	write a related equation.
3. $2 \times a = 8$	write a related equation.	4. $n \times 3 = 15$	write a related equation.
5. $7 \times n = 21$	write a related equation.	6. $c \times 3 = 18$	write a related equation.

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Directions: Find the value of the variable. Then, write a related equation.

7. $a \times 8 = 16$	write a related equation.	8. $3 \times p = 12$	write a related equation.
9. $a \times 5 = 20$	write a related equation.	10. $n \times 6 = 18$	write a related equation.
11. $7 \times n = 21$	write a related equation.	12. $c \times 7 = 28$	write a related equation.
13. $2 \times a = 14$	write a related equation.	14. $p \times 3 = 15$	write a related equation.
15. $a \times 6 = 24$	write a related equation.	16. $n \times 8 = 16$	write a related equation.
17. $5 \times n = 10$	write a related equation.	18. $c \times 6 = 12$	write a related equation.
19. $5 \times n = 25$	write a related equation.	20. $c \times 6 = 18$	write a related equation.

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Use Related Equations: Divide and Multiply

Directions: Find the value of the variable. Then, write a related equation.

21. $14 \div n = 7$	write a related equation.	22. $15 \div n = 5$	write a related equation.
23. $6 \div a = 3$	write a related equation.	24. $n \div 5 = 3$	write a related equation.
25. $n \div 2 = 4$	write a related equation.	26. $12 \div n = 4$	write a related equation.
27. $n \div 5 = 3$	write a related equation.	28. $12 \div n = 3$	write a related equation.
29. $a \div 9 = 3$	write a related equation.	30. $n \div 6 = 2$	write a related equation.
31. $c \div 3 = 5$	write a related equation.	32. $p \div 2 = 7$	write a related equation.
33. $p \div 4 = 5$	write a related equation.	34. $p \div 8 = 3$	write a related equation.

Answer Key
Skill 4 - 3H

Use Related Equations: Multiply and Divide

1.	$3 \times a = 12$ $3 \times 4 = 12$ $a = 4$	write a related equation. $12 \div 3 = 4$	2.	$2 \times n = 6$ $2 \times 3 = 6$ $n = 3$	write a related equation. $6 \div 2 = 3$
3.	$2 \times a = 8$ $2 \times 4 = 8$ $a = 4$	$8 \div 2 = 4$	4.	$n \times 3 = 15$ $5 \times 3 = 15$ $n = 5$	$15 \div 3 = 5$
5.	$7 \times n = 21$ $7 \times 3 = 21$ $n = 3$	$21 \div 7 = 3$	6.	$c \times 3 = 18$ $6 \times 3 = 18$ $c = 6$	$18 \div 3 = 6$

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7.	$a \times 8 = 16$ $2 \times 8 = 16$ $a = 2$	$16 \div 8 = 2$	8.	$3 \times p = 12$ $3 \times 4 = 12$ $p = 4$	$12 \div 3 = 4$
9.	$a \times 5 = 20$ $4 \times 5 = 20$ $a = 4$	$20 \div 5 = 4$	10.	$n \times 6 = 18$ $3 \times 6 = 18$ $n = 3$	$18 \div 6 = 3$
11.	$7 \times n = 21$ $7 \times 3 = 21$ $n = 3$	$21 \div 7 = 3$	12.	$c \times 7 = 28$ $4 \times 7 = 28$ $c = 4$	$28 \div 7 = 4$
13.	$2 \times a = 14$ $2 \times 7 = 14$ $a = 7$	$14 \div 2 = 7$	14.	$p \times 3 = 15$ $5 \times 3 = 15$ $p = 5$	$15 \div 3 = 5$
15.	$a \times 6 = 24$ $4 \times 6 = 24$ $a = 4$	$24 \div 6 = 4$	16.	$n \times 8 = 16$ $2 \times 8 = 16$ $n = 2$	$16 \div 8 = 2$
17.	$5 \times n = 10$ $5 \times 2 = 10$ $n = 2$	$10 \div 5 = 2$	18.	$c \times 6 = 12$ $2 \times 6 = 12$ $c = 2$	$12 \div 6 = 2$
19.	$5 \times n = 25$ $5 \times 5 = 25$ $n = 5$	$25 \div 5 = 5$	20.	$c \times 6 = 18$ $3 \times 6 = 18$ $c = 3$	$18 \div 6 = 3$

Answer Key
Skill 4 - 3H

Use Related Equations: Divide and Multiply

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<p>21. $14 \div n = 7$ $14 \div 2 = 7$ $n = 2$</p>	<p>write a related equation. $7 \times 2 = 14$</p>	<p>22. $15 \div n = 5$ $15 \div 3 = 5$ $n = 3$</p>	<p>write a related equation. $5 \times 3 = 15$</p>
<p>23. $6 \div a = 3$ $6 \div 2 = 3$ $a = 2$</p>	<p>$3 \times 2 = 6$</p>	<p>24. $n \div 5 = 3$ $15 \div 5 = 3$ $n = 15$</p>	<p>$3 \times 5 = 15$</p>
<p>25. $n \div 2 = 4$ $8 \div 2 = 4$ $n = 8$</p>	<p>$4 \times 2 = 8$</p>	<p>26. $12 \div n = 4$ $12 \div 3 = 4$ $n = 3$</p>	<p>$4 \times 3 = 12$</p>
<p>27. $n \div 5 = 3$ $15 \div 5 = 3$ $n = 15$</p>	<p>$3 \times 5 = 15$</p>	<p>28. $12 \div n = 3$ $12 \div 4 = 3$ $n = 4$</p>	<p>$3 \times 4 = 12$</p>
<p>29. $a \div 9 = 3$ $27 \div 9 = 3$ $a = 27$</p>	<p>$3 \times 9 = 27$</p>	<p>30. $n \div 6 = 2$ $12 \div 6 = 2$ $n = 12$</p>	<p>$2 \times 6 = 12$</p>
<p>31. $c \div 3 = 5$ $15 \div 3 = 5$ $c = 15$</p>	<p>$5 \times 3 = 15$</p>	<p>32. $p \div 2 = 7$ $14 \div 2 = 7$ $p = 14$</p>	<p>$7 \times 2 = 14$</p>
<p>33. $p \div 4 = 5$ $20 \div 4 = 5$ $p = 20$</p>	<p>$5 \times 4 = 20$</p>	<p>34. $p \div 8 = 3$ $24 \div 8 = 3$ $p = 24$</p>	<p>$3 \times 8 = 24$</p>