

Name \_\_\_\_\_

# 13-3B Lesson Master

**Questions on SPUR Objectives**  
See pages 833–835 for objectives.

## SKILLS Objective A

In 1-6, state which property is demonstrated.

1. If  $14 = x + 1$ , then  $14 + -1 = x + 1 + -1$ .

\_\_\_\_\_

2. If  $2x = 8$ , then  $2 \cdot 2x = 2 \cdot 8$ .

\_\_\_\_\_

3.  $15 \cdot 1 = 15$

\_\_\_\_\_

4.  $5 + -5 = 0$

\_\_\_\_\_

5. If  $0.2x = 3$ , then  $5 \cdot 0.2x = 5 \cdot 3$ .

\_\_\_\_\_

6.  $-\frac{3}{5} \cdot -\frac{5}{3} = 1$

\_\_\_\_\_

7. Fill in the blanks in the proof below to solve  $3x - 11 = 10$ .

Conclusions	What Was Done	Justification
$3x - 11 = 10$		a.
$3x - 11 + 11 = 10 + 11$	b.	Addition Property of Equality
$3x + 0 = 21$	c.	Additive Inverse Property
$3x = 21$	d.	e.
$\frac{1}{3} \cdot 3x = \frac{1}{3} \cdot 21$	Multiplied both sides by $\frac{1}{3}$ .	f.
$1x = 7$	$\frac{1}{3} \cdot 3x = 1x$ and $\frac{1}{3} \cdot 21 = 7$	g.
$x = 7$	$1x = x$	h.

8. a. Write an if-then statement for the above proof. \_\_\_\_\_

b. Write the converse of the statement in Part a. \_\_\_\_\_

9. *True or false.*  $4x - 2 = 6$  if and only if  $x = 2$ . \_\_\_\_\_

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**13-3B**

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**SKILLS** Objective A

In 10–12, fill in the blanks in the proof to solve the given equation.

10.  $2x - 8 = -10$

Conclusions	What Was Done	Justification
$2x - 8 = -10$		Given
$2x - 8 + 8 = -10 + 8$	Added 8 to both sides.	a.
$2x + 0 = -2$	$-8 + 8 = 0$	b.
$2x = -2$	c.	Additive Identity Property
$\frac{1}{2} \cdot 2x = \frac{1}{2} \cdot -2$	d.	Multiplication Property of Equality
$x = -1$	e.	Multiplicative Inverse Property and arithmetic
$x = -1$	$1x = x$	f.

11.  $(x - 2)^2 = -5x + 60$

Conclusions	Justification
$(x - 2)^2 = -5x + 60$	a.
$x^2 - 4x + 4 = -5x + 60$	b.
$x^2 - 4x + 5x + 4 - 60 = -5x + 60 + 5x - 60$	c.
$x^2 + x - 56 = 0$	d.
$(x + 8)(x - 7) = 0$	e.
$(x + 8) = 0$ or $(x - 7) = 0$	f.
$x = -8$ or $x = 7$	g.

12.  $(x + 1)^2 = -3x - 5$

Conclusions	Justification
$(x + 1)^2 = -3x - 5$	a.
$x^2 + 2x + 1 = -3x - 5$	b.
$x^2 + 2x + 1 + 3x + 5 = -3x - 5 + 3x + 5$	c.
$x^2 + 5x + 6 = 0$	d.
$(x + 3)(x + 2) = 0$	e.
$(x + 3) = 0$ or $(x + 2) = 0$	f.
$x = -3$ or $x = -2$	g.