

LESSON
2-5

Practice A

Solving Inequalities with Variables on Both Sides

Fill in the blanks to solve each inequality.

1. $2x \leq 3x + 8$

- _____

$-1x \leq$ _____

$\div (-1) \div (-1)$

x _____

2. $8y > -2(3y - 7)$

$8y >$ _____ $+$ _____

$+$ _____ $+$ _____

$14y >$ _____

\div _____ \div _____

$y >$ _____

3. $3(5n + 6) < 10n - 4$

_____ $+$ _____ $< 10n - 4$

$\underline{-10n}$ \quad $\underline{-10n}$

_____ $+$ _____ < -4

$-$ _____ $-$ _____

$5n < -22$

\div _____ \div _____

Solve each inequality and graph the solutions.

4. $5x \geq 7x + 4$

5. $3(b - 5) < -2b$



Identify each inequality as an identity (all real numbers are solutions) or contradiction (no solutions).

6. $10 < -2$

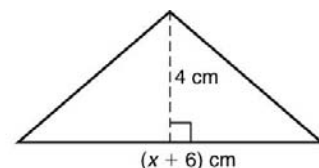
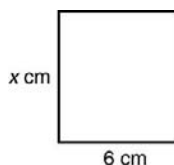
7. $a - 7 \leq a$

8. $2(z + 3) > 2z$

Write and solve an inequality for each problem.

9. Jay can buy a stereo either online or at a local store. If he buys online, he gets a 15% discount, but has to pay a \$12 shipping fee. At the local store, the stereo is not on sale, but there is no shipping fee. For what regular prices is it cheaper for Jay to buy the stereo online?

10. For what values of x is the area of the rectangle greater than the area of the triangle?




6. a. $x \geq 40$ and $x \leq 55$;
b. $x > 0$ and $x < 40$
or $x > 55$
7. maximum: \$190,000
minimum: \$180,000
 $x \geq \$180,000$ and $x \leq \$190,000$
8. $x \geq \$75,000$ and $x \leq \$255,000$

Problem Solving

1. $\frac{p+24}{2} > 20; p > 16$
2. $1500 + 0.15s \geq 2430; s \geq 6200$
3. $15 + 2y < 58; y < 21.5$
4. $5 + 2.5p \leq 23; p \leq 7.2; 0, 1, 2, 3, 4, 5, 6,$
or 7 plants
5. C
6. H
7. A

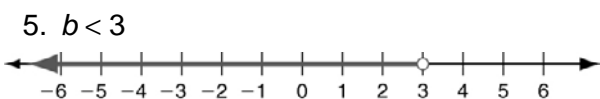
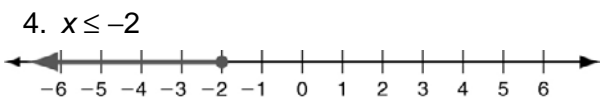
Reading Strategies

1. to show the infinitely many solutions
2. 
3. -1
Possible Answer:
4. -2, -3, -4, -5, -6
5. yes; -2

2-5 SOLVING INEQUALITIES WITH VARIABLES ON BOTH SIDES

Practice A

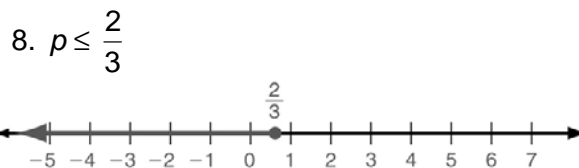
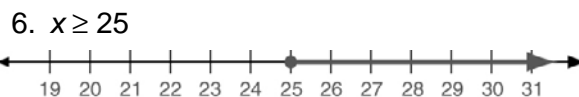
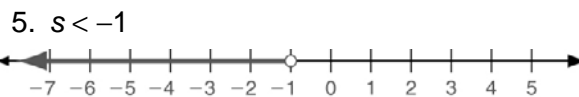
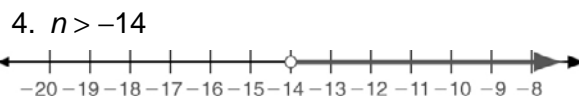
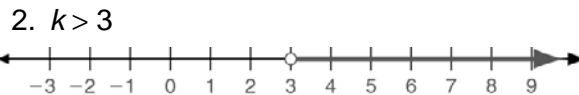
1. $3x; -3x; 8; \geq -8$
2. $-6y; 14; 6y; 6y; 14; 14; 14; 1$
3. $15n; 18; 5n; 18; 18; 18; 5; 5; n < -4\frac{2}{5}$



6. contradiction
7. identity
8. identity

9. $p - 0.15p + 12 < p; p > 80$; greater than \$80
10. $6x > \frac{1}{2}(4)(x+6); x > 3$

Practice B



9. all real numbers
10. no solutions
11. no solution
12. $9.95m < 4.95m + 49.95; m < 9.99$;
for 0 to 9 months
13. $7(x+2) > 7 + (x+2) + 7 + (x+2); x > 0.8$

Practice C

1. $x > \frac{1}{2}$
2. $p \geq -1\frac{3}{7}$
3. $s \geq -\frac{3}{5}$