1.6 Practice and problem solving Key

Simple p41: 15 – 18, 27 – 29

Complex p41: 19 -26

Apply: p42: 30 -32

Write a compound inequality for each graph.
SEE EXAMPLE 1

15. 

$x < -2$ or $x > 1$

16. 

$x \geq -5$ and $x \leq -1$

17. 

$x \geq -0.5$ and $x < 0.25$

18. 

$x \leq -1.2$ or $x \geq -0.4$

Write a compound inequality to represent each sentence below. SEE EXAMPLE 4

27. A quantity x is at least 10 and at most 20.
$x \geq 10$ and $x \leq 20$, or $10 \leq x \leq 20$

28. A quantity x is either less than 10 or greater than 20. $x < 10$ or $x > 20$

29. A quantity x is greater than 10 and less than 20.
$x > 10$ and $x < 20$, or $10 < x < 20$

Complex

Solve each compound inequality and graph the solution. SEE EXAMPLES 2 AND 3

19. $2x + 5 > -3$ and $4x + 7 < 15$ $x > -4$ and $x < 2$

20. $2x - 5 > 3$ or $-4x + 7 < -25$ $x > 4$

21. $2x - 5 > 3$ and $-4x + 7 < -25$ $x > 8$

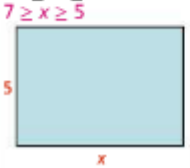
22. $-x + 1 > -2$ or $6(2x - 3) \geq -6$ all real numbers

23. $-x + 1 > -2$ and $6(2x - 3) \geq -6$ $1 \leq x < 3$

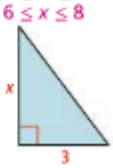
24. $-\frac{5}{8}x + 2 + \frac{3}{4}x > -1$ or $-3(x + 25) > 15$
$x < -30$ or $x > -24$

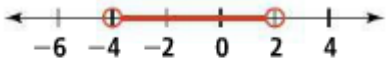
The value for the area A of each figure is given. Write and solve a compound inequality for the value of x in each figure. SEE EXAMPLE 4

25. $35 \geq A \geq 25$
$7 \geq x \geq 5$



26. $9 \leq A \leq 12$
$6 \leq x \leq 8$



19. 

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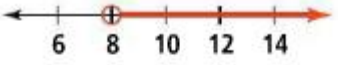
21. 

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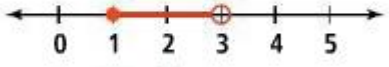
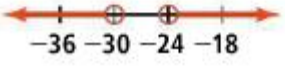
23. 

24. 

Apply

30. at least 12 and at most 18 pencils

31. Answers may vary. Sample: $x < 20 + 20(30.5)$ or $x > 20 + 20(33.5)$; $x < 630$ or $x > 690$; Cartons less than 630 ounces and greater than 690 ounces should be opened for inspection.

32. $100 \leq 2.5(2x + 7.5) \leq 200$; 16.25 ft $\leq x \leq$ 36.25 ft