

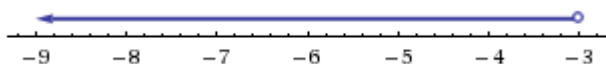
6.1 Inequality Expressions

Answers

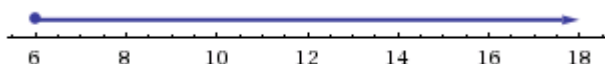
1.

1. Inequality notation: The answer is expressed as an algebraic inequality, such as $d \leq \frac{1}{2}$.
2. Set notation: The inequality is rewritten using set notation brackets $\{ \}$. For example, $\{d | d \leq \frac{1}{2}\}$ is read, "The set of all values of d , such that d is a real number less than or equal to one-half."
3. Interval notation: This notation uses brackets to denote the range of values in an inequality.
 1. Square or "closed" brackets $[]$ indicate that the number is **included** in the solution
 2. Round or "open" brackets $()$ indicate that the number is **not included** in the solution.
4. Interval notation also uses the concept of infinity ∞ and negative infinity $-\infty$. For example, for all values of d that are less than or equal to $\frac{1}{2}$, you could use set notation as follows: $(-\infty, \frac{1}{2}]$. As a graphed sentence on a number line.

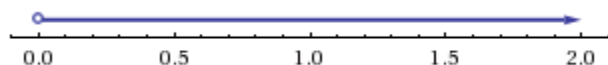
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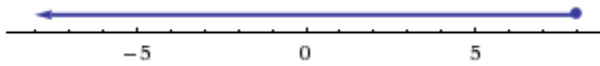
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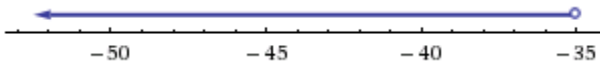
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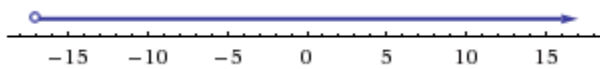
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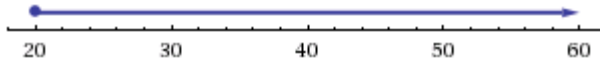
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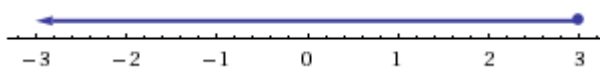
7.



8.



9.



10. $x \leq -12$

11. $x > 520$

12. $x < 6.5$

13. $x \geq 85$

14. $x > 30$

15. $x \leq -10$

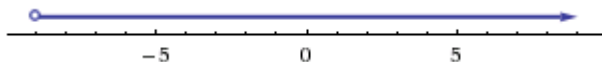
16. $x < -10$

17. $x \geq 1$

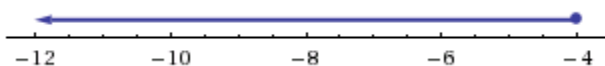
6.2 Inequalities with Addition and Subtraction

Answers

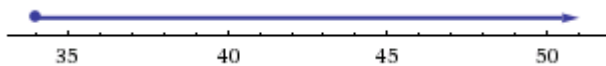
1. $x > -9$



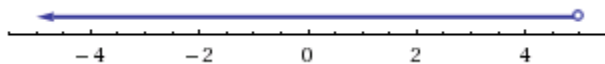
2. $x \leq -4$



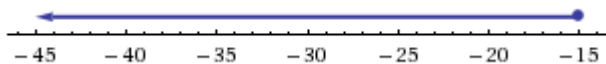
3. $a \geq 34$



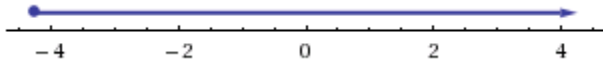
4. $x < 5$



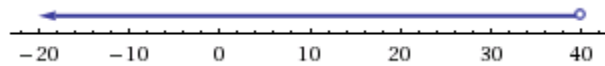
5. $x \leq -15$



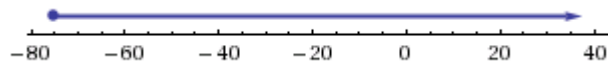
6. $t \geq -4\frac{1}{4}$



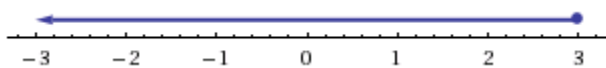
7. $x < 40$



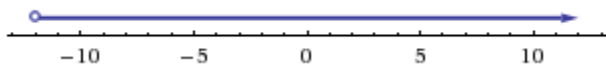
8. $g \geq -75$



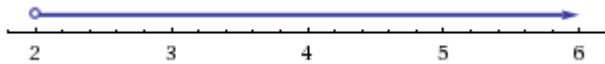
9. $x \leq 3$



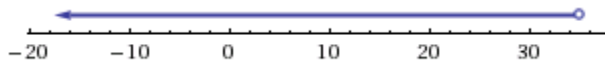
10. $x > -12$



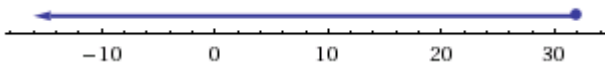
11. $q > 2$



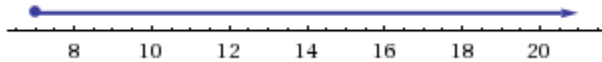
12. $x < 35$



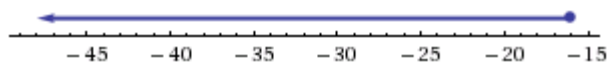
13. $x \leq 32$



14. $x \geq 7$



15. $y \leq -16$

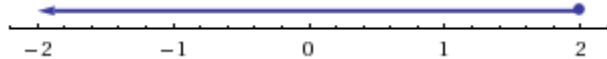


6.3 Inequalities with Multiplication and Division

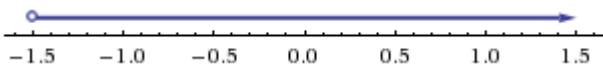
Answers

1. Whenever you divide or multiply by a negative

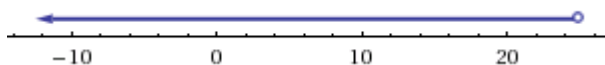
2. $x \leq 2$



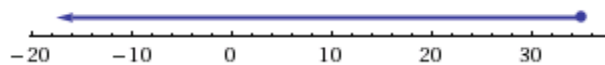
3. $x > -\frac{3}{2}$



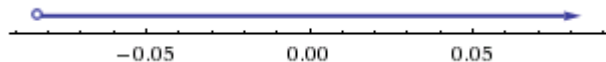
4. $x < 25$



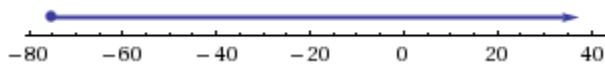
5. $x \leq 35$



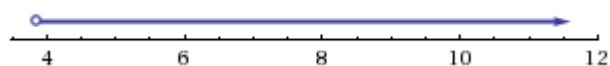
6. $x > -\frac{1}{12}$



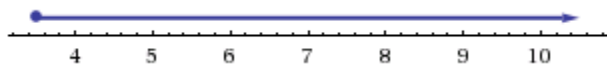
7. $x \geq -75$



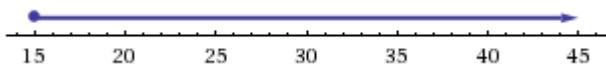
8. $x > 3.87$



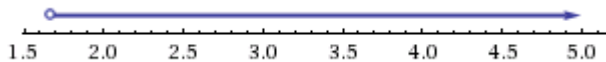
9. $x \geq \frac{7}{2}$



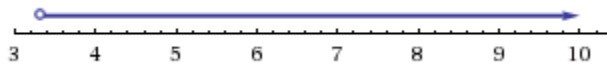
10. $x \geq 15$



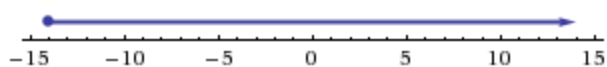
11. $x > 1.666$



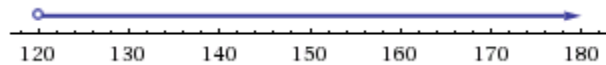
12. $x > \frac{10}{3}$



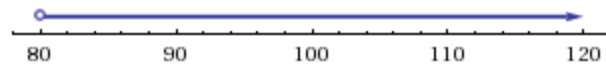
13. $k \geq -14$



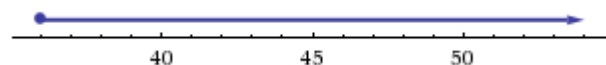
14. $x > 120$



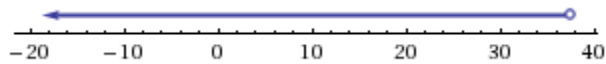
15. $x > 80$



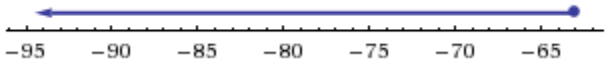
16. $x \geq 36$



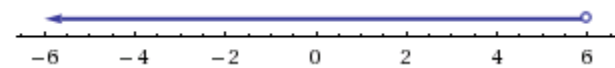
17. $x < 37\frac{1}{2}$



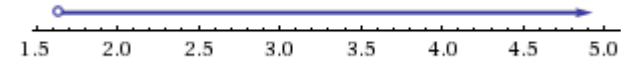
18. $x \leq -63$



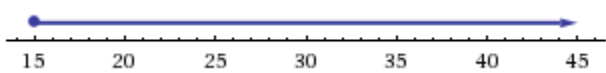
19. $x < 6$



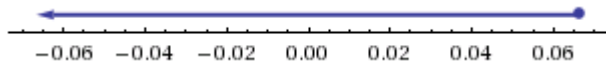
20. $1.643 < d$



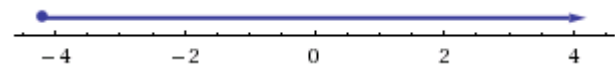
21. $m \geq 15$



22. $x \leq \frac{1}{15}$



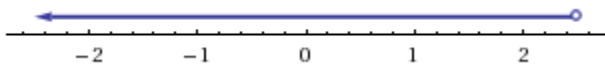
23. $x \geq -4\frac{1}{5}$



6.4 Multi-Step Inequalities

Answers

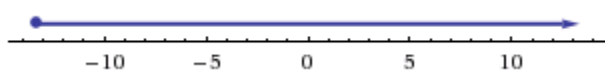
1. $x < 2\frac{1}{2}$



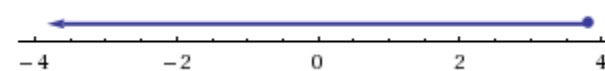
2. $x > 3\frac{3}{4}$



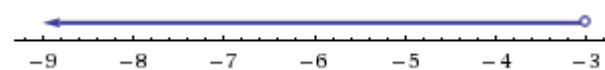
3. $x \geq -13\frac{1}{3}$



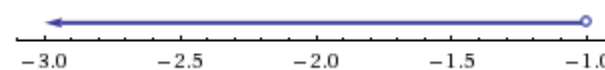
4. $x \leq 3\frac{5}{6}$



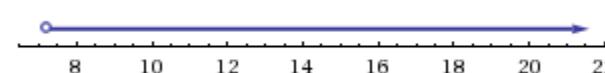
5. $x < -3$



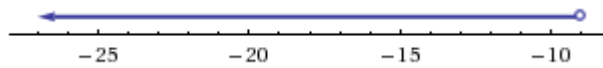
6. $x < -1$



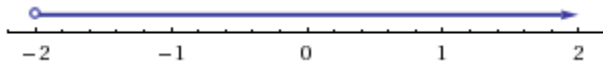
7. $x > 7\frac{1}{5}$



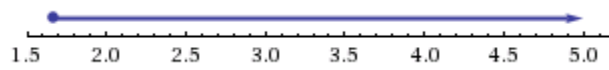
8. $x < -9$



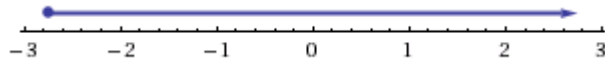
9. $x > -2$



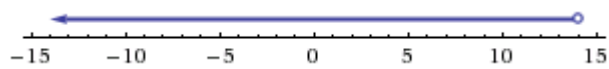
10. $x \geq 1\frac{2}{3}$



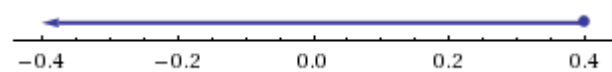
11. $x \geq -2\frac{3}{4}$



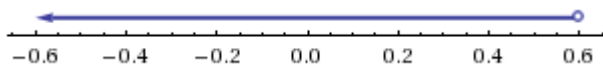
12. $x < 14$



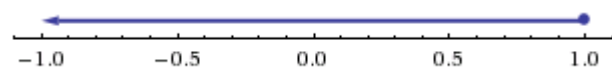
13. $x \leq \frac{2}{5}$



14. $x < \frac{3}{5}$



15. $x \leq 1$



6.5 Compound Inequalities

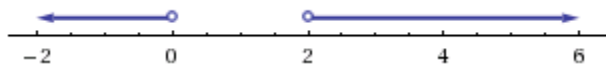
Answers

1. The word “**and**” in mathematics means the **intersection** between the sets. “What the sets have in common.”
2. The word “**or**” in mathematics means the **union** of the sets. “Combining both sets into one large set.”
3. When we solve compound inequalities, we separate the inequalities and solve each of them separately. Then, we combine the solutions at the end.
4. $-40 \leq x < 60$
5. $-2 > x$ or $x \geq 5$
6. $-8 < x < 0$
7. $-2 \geq x$ or $x > 1.5$
8. $-25 < x < 25$
9. $-1 \geq x$ or $x \geq 4$
10. $-2 > x$ or $x > 1$

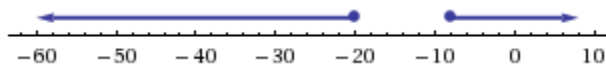
11.



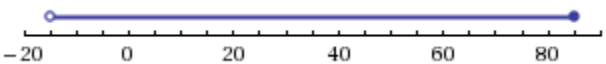
12.



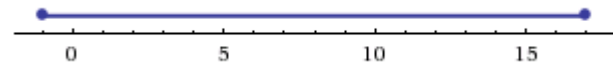
13.



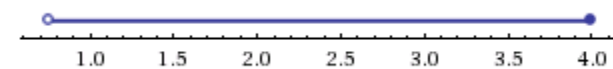
14.



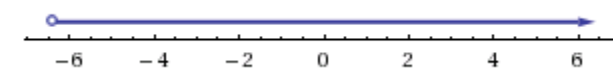
15. $-1 \leq x \leq 17$



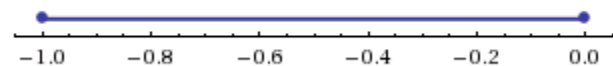
16. $\frac{3}{4} < x \leq 4$



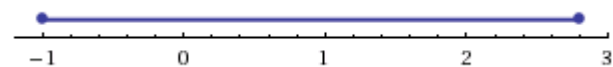
17. $2 \leq x$ or $x > -6\frac{2}{5}$



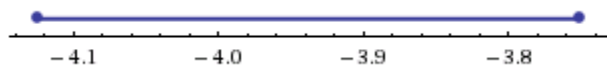
18. $-1 \leq x \leq 0$



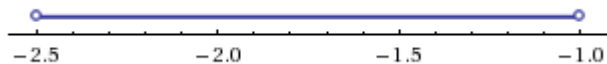
19. $-1 \leq x \leq \frac{14}{5}$



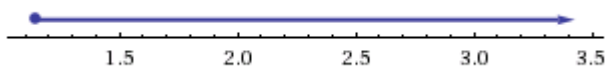
20. $-\frac{33}{8} \leq x \leq -\frac{15}{4}$



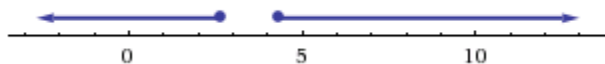
21. $-\frac{5}{2} < x < -1$



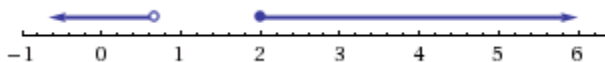
22. $x \geq \frac{8}{7}$



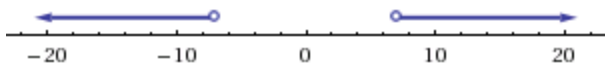
23. $x \leq \frac{8}{3}$ or $x \geq \frac{13}{3}$



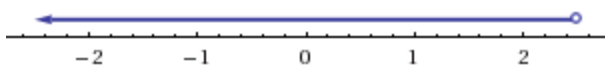
24. $x \geq 2$ or $x \leq 1$



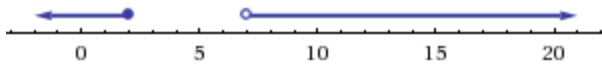
25. $x < -7$ or $x > 7$



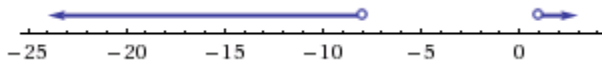
26. $x < -6$ or $x < \frac{5}{2}$



27. $x \leq 2$ or $x > 7$



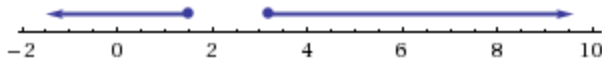
28. $d < -8$ or $d > 1$



29. $b \geq 0$ or $b < 2$ (all numbers)



30. $x \geq \frac{16}{5}$ or $x \leq \frac{3}{2}$



6.6 Applications with Inequalities

Answers

1. $x \geq 48''$

2. $x < 3\text{yrs.}$

3. $x > \$1800.00$

4. $x \leq 6 \text{ pets}$

5. $x \leq 16 \text{ rabbits}$

6. a. $16x > 180, x > 11.25$

b.



7. a. $.90x \leq 45,$

b. $x \leq 50$

8. a. $2x \leq 22$

b. $x \leq 11$

9. $22.75x \leq 71$ You can enter at most 3 times before spending more than the cost of a yearly membership.

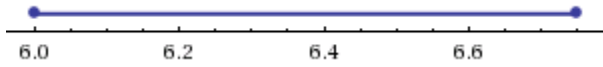
10. $((82 + 95 + 86 + 88)/4 + x)/2 > 90 = x > 92.25$

11. $x \leq 200,$ He can buy 4 ties.

12. $4.50x \geq 650$, She needs to sell a minimum of 145 boxes to reach this goal.

13. $\frac{5}{8}s < t < \frac{15}{16}s$

14. (15 gal tank, driving @ 40mph) $\frac{(16 \times 15)}{40} \leq x \leq \frac{(18 \times 15)}{40}$



15. $80 < \frac{92 + 78 + 85}{3} + x < 90$, $75 < x < 95$

6.7 Absolute Value

Answers

1. 250

2. 12

3. $\frac{2}{5}$

4. $\frac{1}{10}$

5. 23

6. 17

7. 9

8. 5

9. $11\frac{1}{3}$

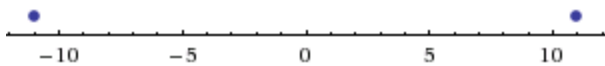
10. .75

11. 22

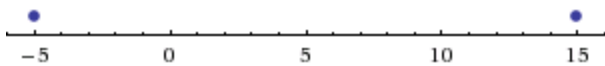
6.8 Absolute Value Equations

Answers

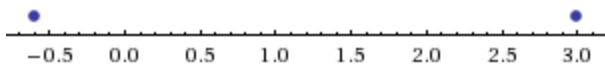
1. $|u| = \pm 11$



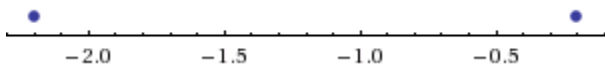
2. $x = -5, x = 15$



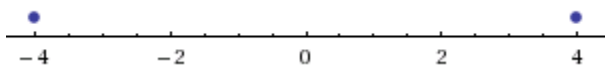
3. $r = 3, r = -\frac{3}{5}$



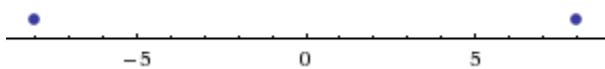
4. $z = -\frac{11}{5}, z = -\frac{1}{5}$



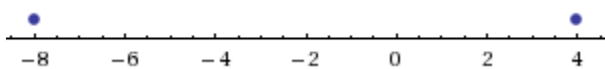
5. $x = \pm 4$



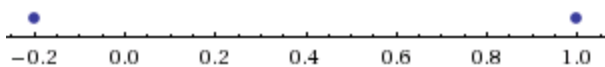
6. $m = \pm 8$



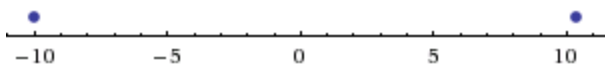
7. $x = -8, 4$



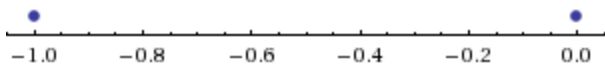
8. $x = -\frac{1}{5}, 1$



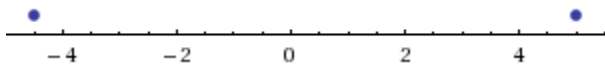
9. $b = -10, \frac{52}{5}$



10. $y = -1, 0$



11. $x = -\frac{9}{2}, 5$

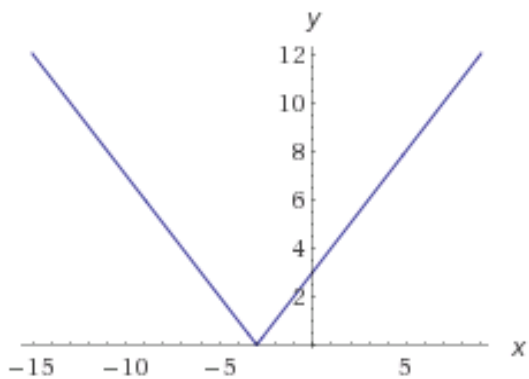
12. *No solutions exist.*

13. $x = 11\frac{31}{32}, 12\frac{1}{32}$

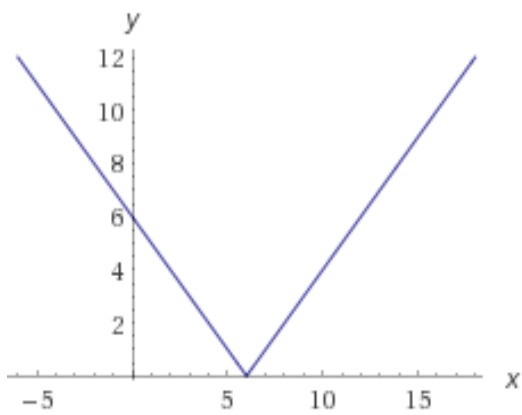
6.9 Graphs of Absolute Value Equations

Answers

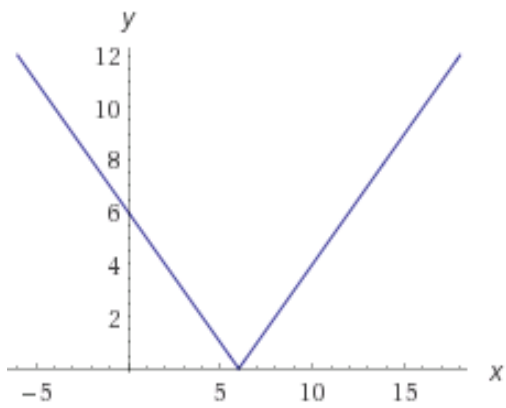
1.



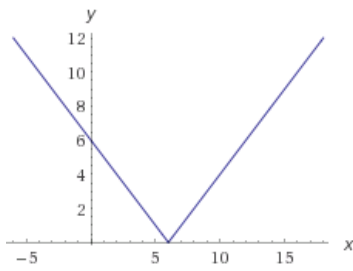
2.



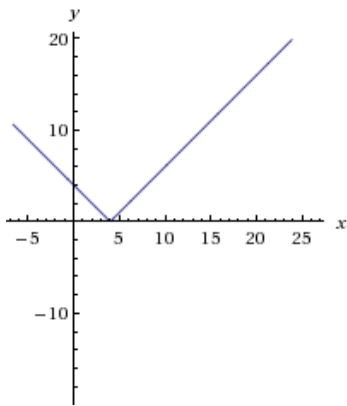
3.



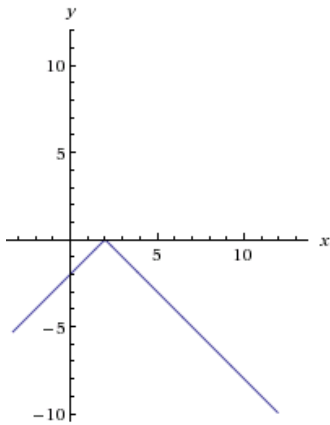
4.



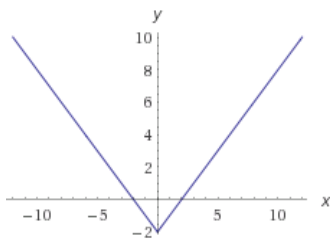
5.



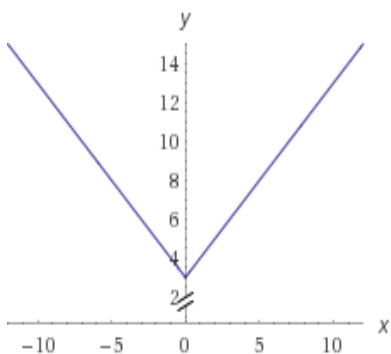
6.



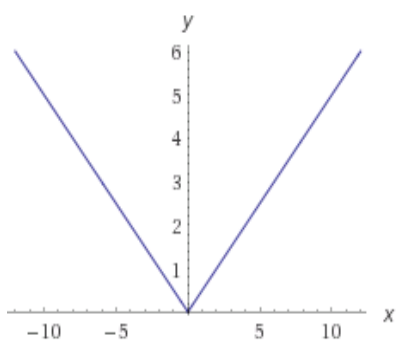
7.



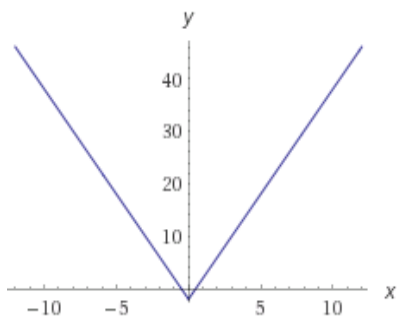
8.



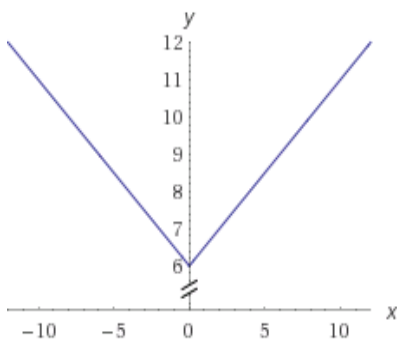
9.



10.



11.

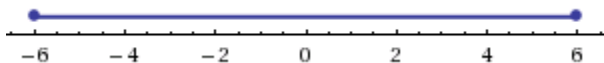


6.10 Absolute Value Inequalities

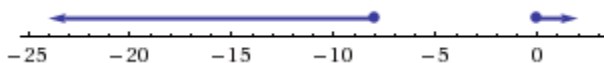
Answers

1. $|-5 + 1| \leq 4, |3 + 1| = 4$

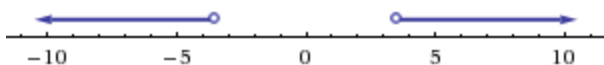
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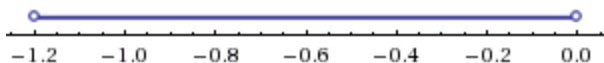
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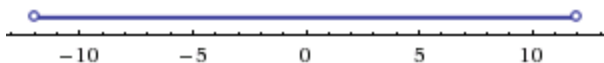
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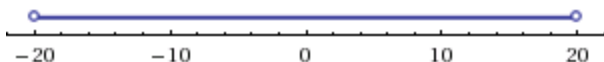
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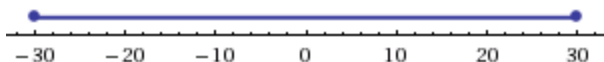
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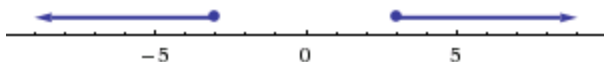
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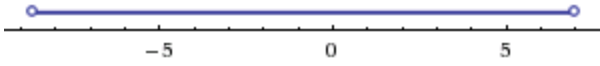
8.



9.



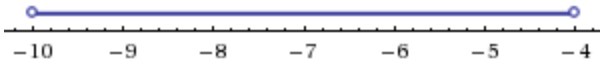
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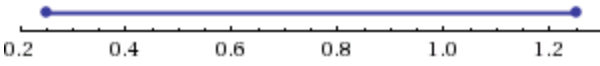
11.



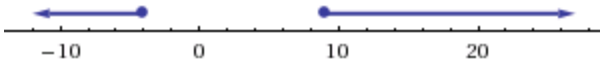
12.



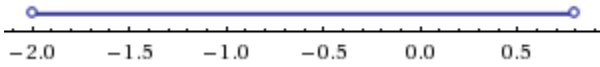
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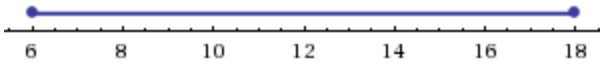
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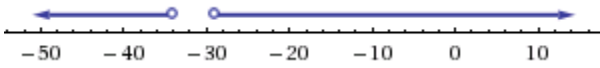
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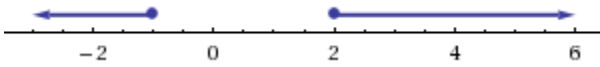
16.



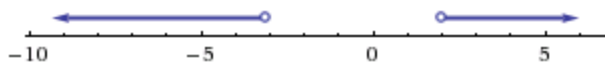
17.



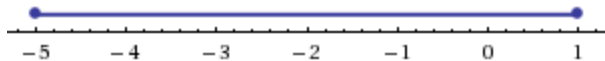
18.



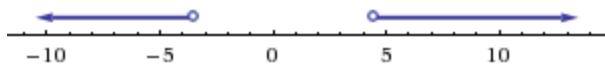
19.



20.



21.



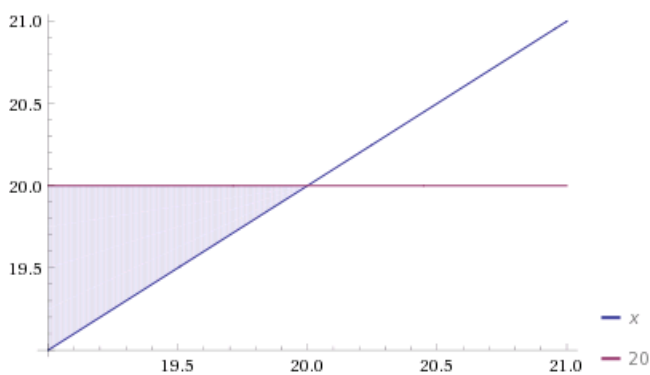
22. $15.5 > x > 10.5$

6.11 Linear Inequalities in Two Variables

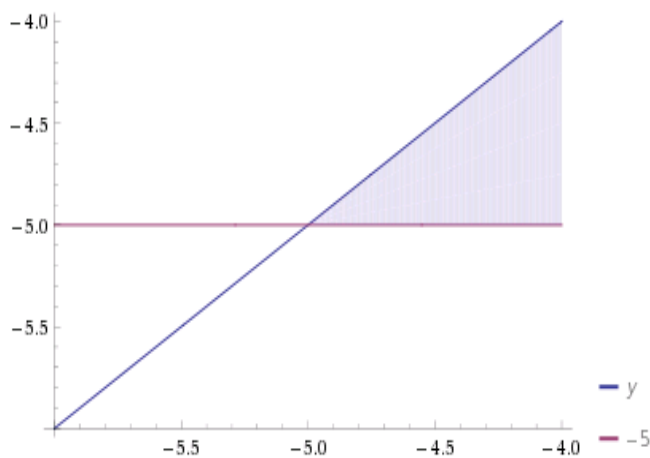
Answers

1. When a linear equation is graphed in a coordinate plane, the line splits the plane into two pieces. Each piece is called a **half plane**
2. The dashed line shows that the points on the line are not part of the solution.
3. The solid line shows that the points on the line are part of the solution.
4. $>$ The solution is the half plane above the line. $<$ The solution is the half plane below the line.

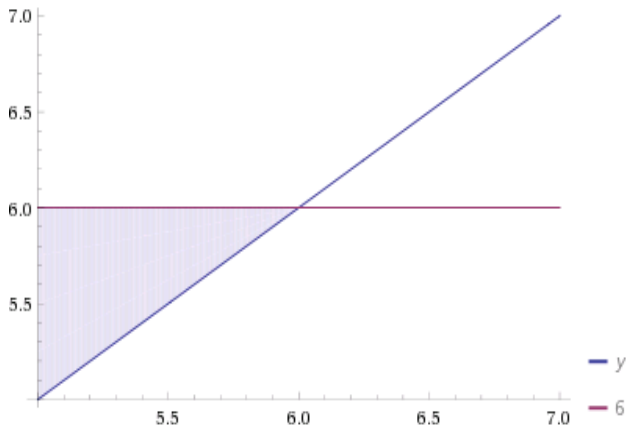
5.



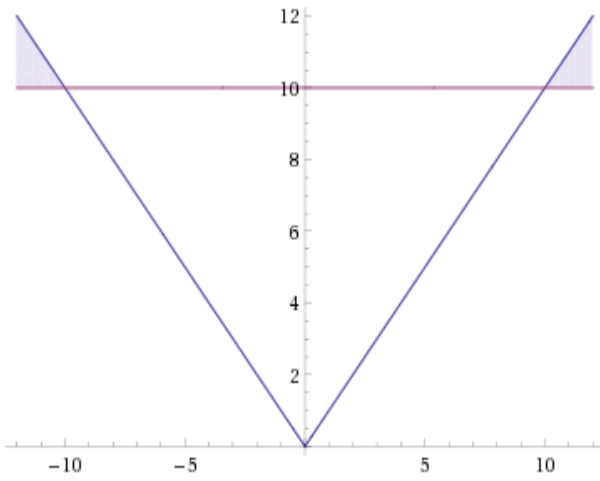
6.



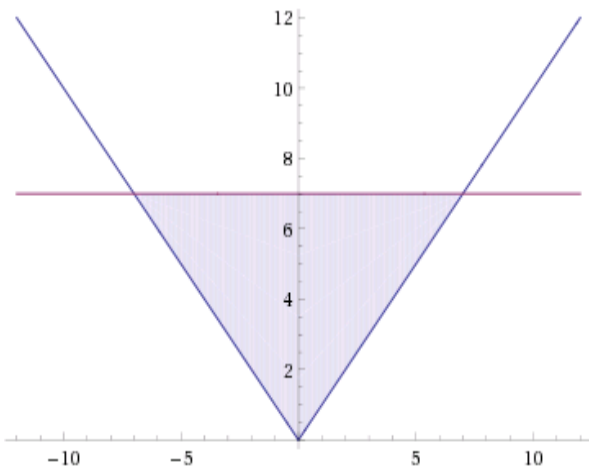
7.



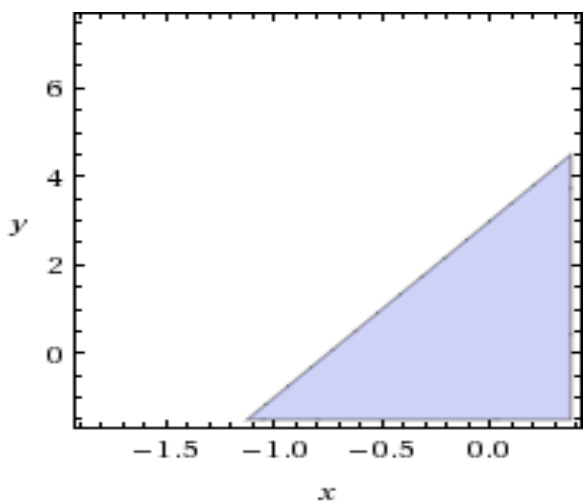
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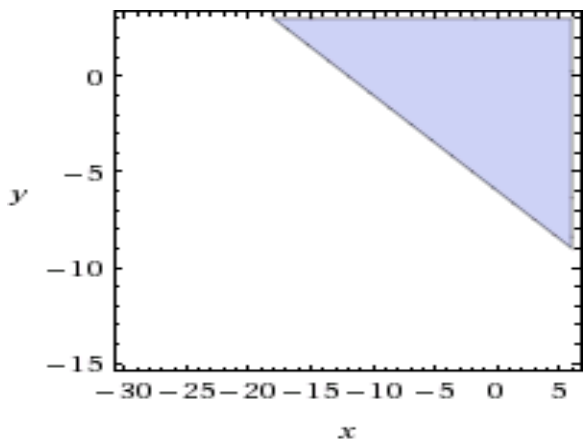
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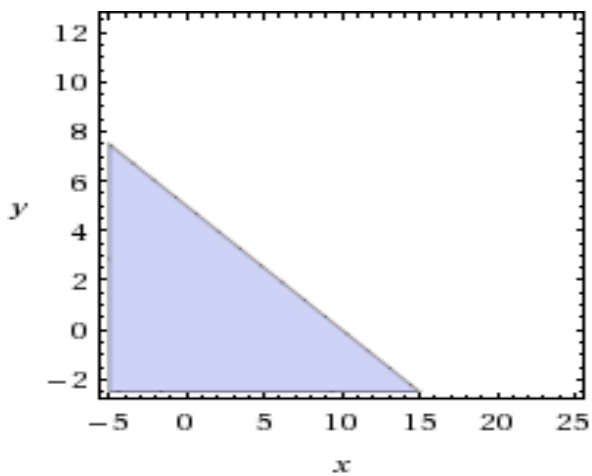
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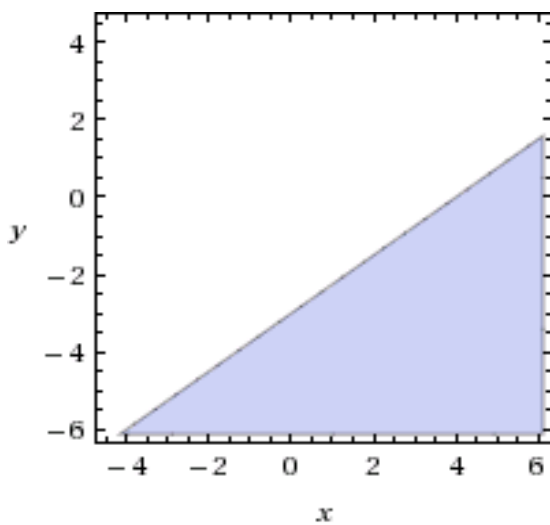
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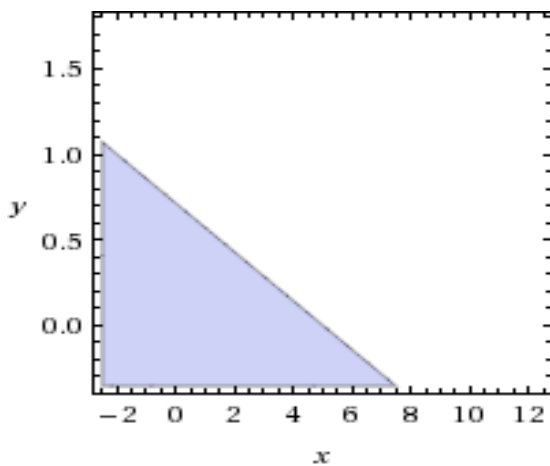
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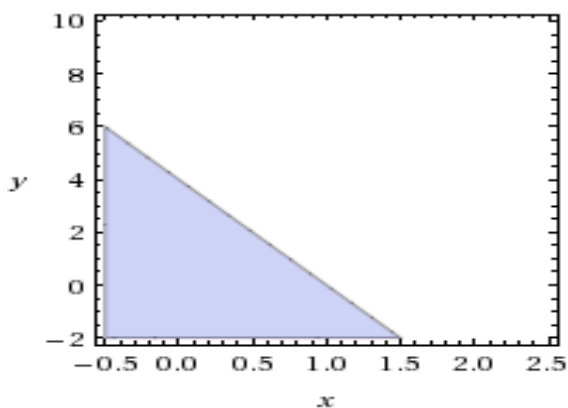
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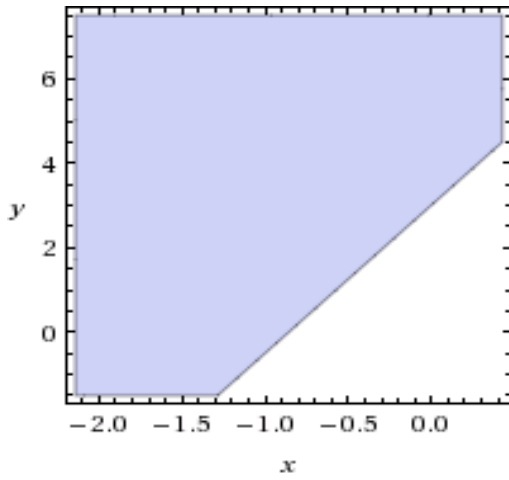
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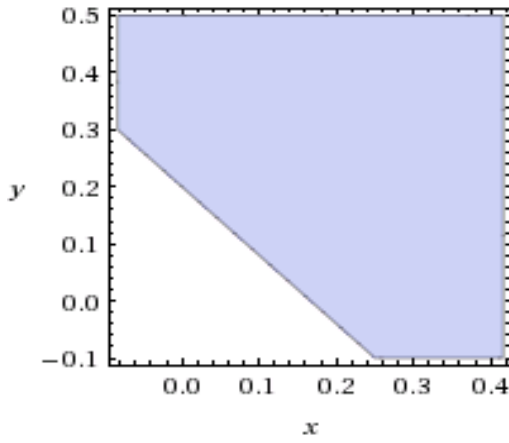
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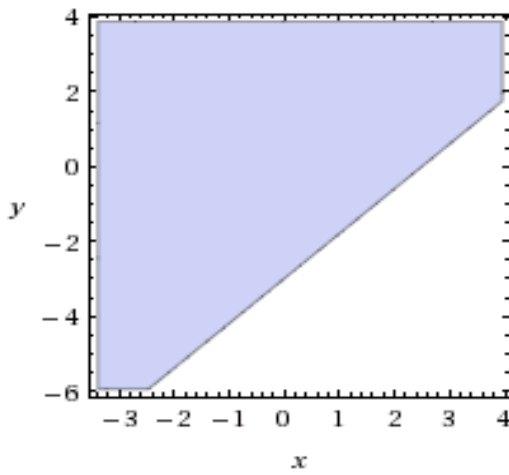
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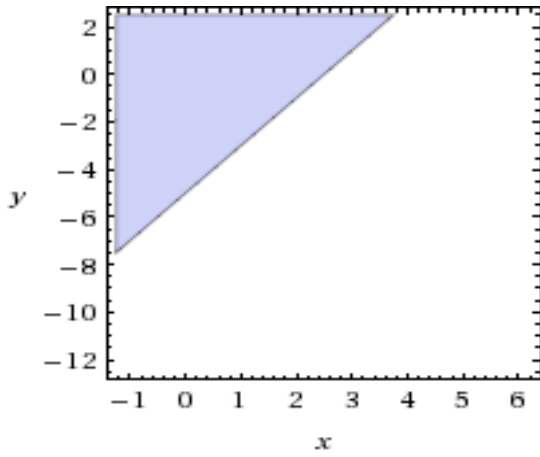
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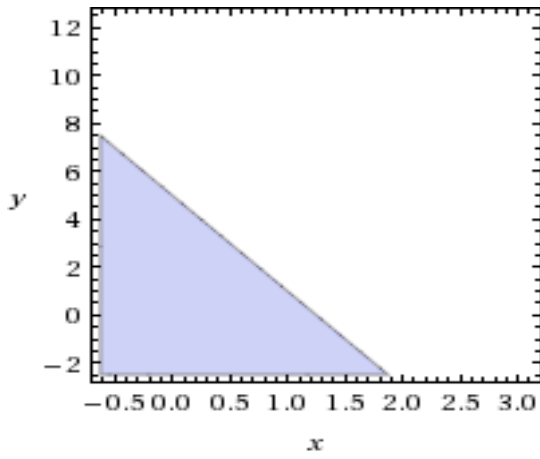
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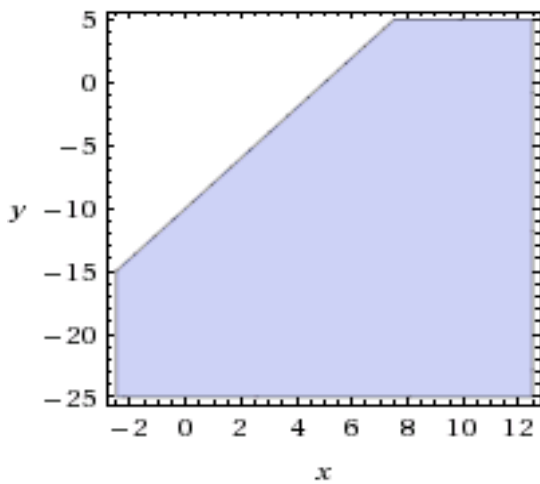
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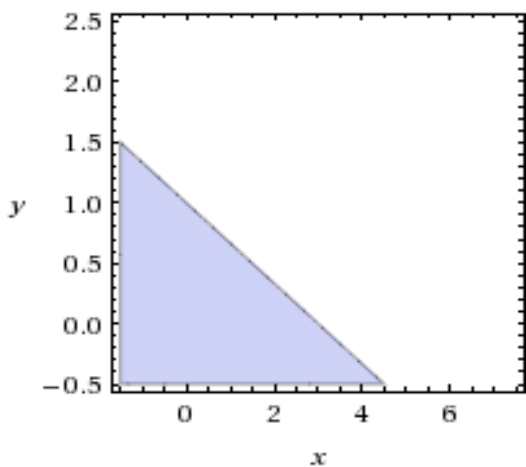
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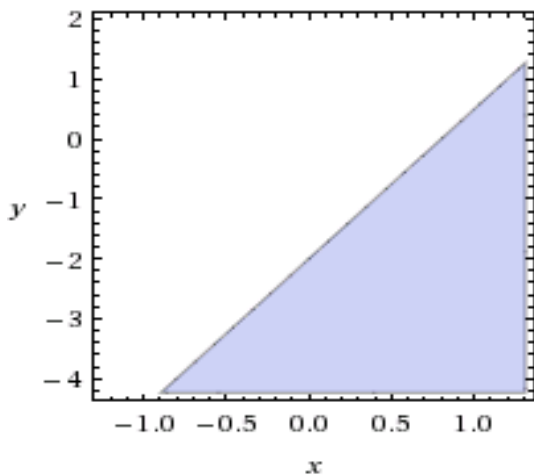
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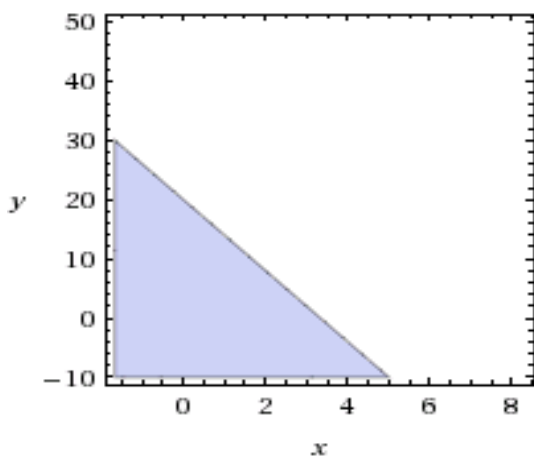
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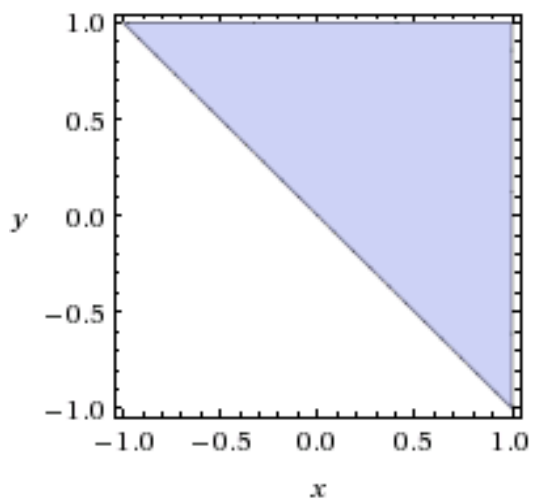
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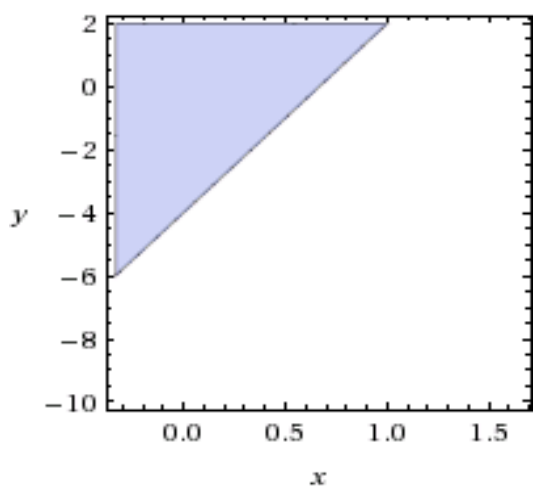
24.



25.



26.



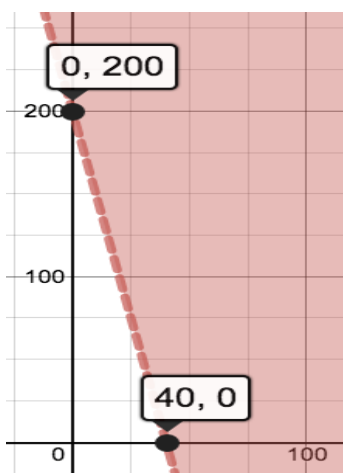
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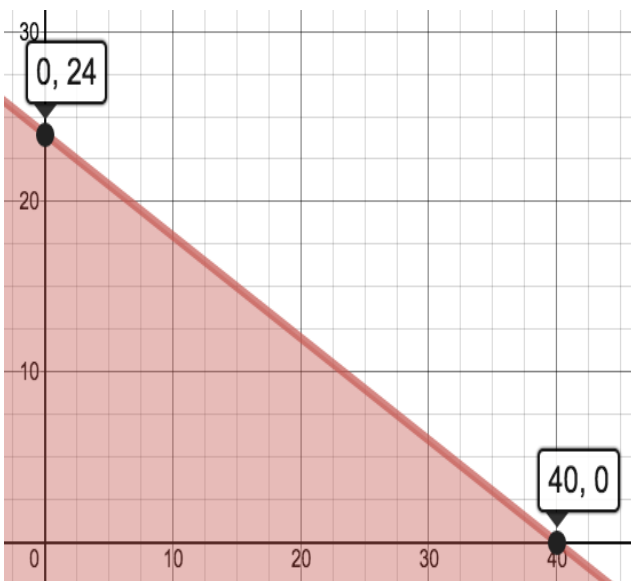
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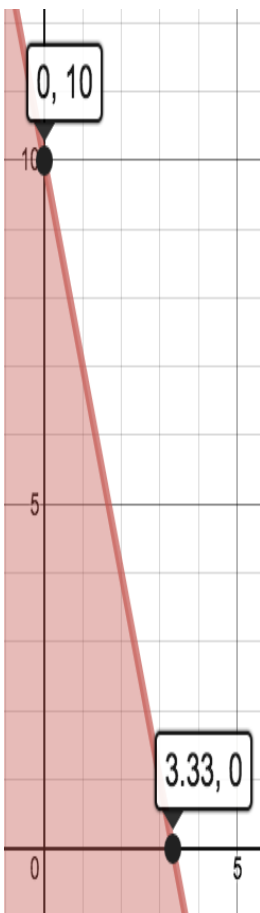
29.



30.



31.



6.12 Theoretical and Experimental Probability

Answers

1. Performing an experiment to determine the probability
2. **Theoretical probability** is a **ratio** expressing the ways to be successful to the total events in an experiment.

3.

Fraction	Decimal	Percent
$\frac{49}{50}$	.98	98%
$\frac{3}{200}$	.015	1.5%
$\frac{1}{16}$	.1666...	16.66%
$\frac{2}{3}$	.6666...	66.66%
$\frac{31}{50}$	.62	62%
$\frac{73}{100}$	.73	73%

4. The set of all possible outcomes
5. Answers will vary
6. Answers will vary
7. Answers will vary
8. Answers will vary
9. 52

10. $\frac{1}{13}$ or .077

11. 10 : 3

12. 1 : 12

13. 25%

14. $\frac{1}{52}$ or .019

15. $\frac{5}{52}$ or .0961

16. 3 : 1

17. 1 : 1

18. Pulling a red or black card

19. Answers may vary based on where student lives and the climate of the specific region within which the student lives.

20. Answers will vary based on where student lives and the climate of the specific region within which the student lives.

21. 4 possible outcomes: TT, HH, HT, TH

22. 50%

23. 25%

24. Flipping at least one head or one tail

25. Answers will vary