

TEST A CHAPTER 6, EQUATIONS, INEQUALITIES, PROBLEM SOLVING

- _____ 1. Factor $x^2 - 5x + 6$.
- _____ 2. Factor $x^2 - 4x - 5$.
- _____ 3. Solve:
- _____ a. $(x + 2)(x - 3) = 0$
- _____ b. $x(x - 3)(x + 4) = 0$
- _____ 4. Solve by factoring: $x^2 + 8x + 12 = 0$.
- _____ 5. Solve by factoring: $x^2 - 2x - 15 = 0$.
- _____ 6. Solve by the quadratic formula: $3x^2 + 2x - 5 = 0$
- _____ 7. Solve by the quadratic formula: $4x^2 - 4x - 5 = 0$
- _____ 8. Solve: $4x^2 - 81 = 0$
- _____ 9. Solve: $6x^2 - 49 = 0$
- _____ 10. The hypotenuse of a right triangle is 4 cm longer than one leg and 2 cm longer than the other leg. What are the dimensions of this triangle?
- _____ 11. Suppose you rent a car for one day at the rate of \$25 per day plus 20 cents per mile. How many miles could you drive for a rental charge of \$90?
- _____ 12. It is known that corresponding sides of two similar rectangles are proportional. Joey drew a 5 in. by 8 in. rectangle and wants to draw a similar rectangle with the shorter side of length 11 in. How long must the longer side be?
- _____ 13. The cost of gasoline per hour for running a certain car is directly proportional to the square of the speed. If the cost is \$2 per hr for a speed of 40 mph, what is the cost per hour for a speed 60 mph?

- _____ 14. At constant temperature, the volume of an enclosed gas varies inversely as the pressure. If the volume is 12 in.³ when the pressure is 24 lb per in.², what is the volume if the pressure is increased to 36 lb per in.²?
- _____ 15. If the replacement set is the set of integers, find the solution set of
 _____ a. $x + 4 = 7$
 _____ b. $x - 4 = -9$
- _____ 16. If the replacement set is the set of integers, find the solution set of
 _____ a. $x + 9 > 11$
 _____ b. $x + 4 \leq -4 + 3x$
- _____ 17. Solve:
 _____ a. $2 + x = 5 - 8x$
 _____ b. $2x - 2 \leq 8 - 3x$
- _____ 18. Graph the solution set of
 _____ a. $x + 2 > 0$
 _____ b. $-x + 3 > 5 - 2x$
- _____ 19. Graph the solution set of $x - 1 \geq 3$ and $x \geq 2$.
- _____ 20. Graph the solution set of $x - 3 \leq 0$ and $x + 1 \geq -2$.
- _____ 21. Graph the solution set of $x \geq 1$ or $x + 2 \leq 1$.
- _____ 22. Graph the solution set of $x + 1 < 0$ or $x - 1 < -3$.
- _____ 23. Graph the solution set of $|x| = 4$.
- _____ 24. Graph the solution set of $|x| \geq 3$.
- _____ 25. Graph the solution set of $|x - 1| < 1$.
- _____ 26. Graph the solution set of $|x + 2| < 2$.
- _____ 27. Graph the solution set of $|x| > 3$.
- _____ 28. Graph the solution set of $|x - 2| > 2$.

TEST B CHAPTER 6, EQUATIONS, INEQUALITIES, PROBLEM SOLVING

1. When factored, $x^2 - 6x + 5 =$
a. $(x + 5)(x - 1)$ b. $(x - 5)(x + 1)$ c. $(x - 1)(x - 5)$
d. $(x + 1)(x + 5)$ 5. None of these
2. The factored form of $x^2 - 2x - 8$ is
a. $(x - 2)(x + 4)$ b. $(x + 2)(x - 4)$ c. $(x - 2)(x - 4)$
d. $(x - 8)(x + 1)$ e. None of these
3. The solution set of $x(x - 3)(x + 4) = 0$ is
a. $\{3, 4\}$ b. $(-3, 4)$ c. $\{-4, 3\}$
d. $\{-4, 0, 3\}$ e. $\{-3, 0, 4\}$
4. The solution set of $x^2 - 13x + 12 = 0$ is
a. $x = 1, x = 12$ b. $x = -1, x = -12$ c. $\{1, 12\}$
d. $\{-12, -1\}$ e. None of these
5. The solutions of $x^2 + 3x - 10 = 0$ are
a. $x = -5, x = 2$ b. $x = -2, x = 5$ c. $x = -10, x = 1$
d. $x = -1, x = 10$ e. None of these
6. The solution set of $5x^2 + 3x - 2 = 0$ is
a. $\left\{ \frac{-3 \pm \sqrt{29}}{10} \right\}$ b. $\left\{ -\frac{2}{5}, 1 \right\}$ c. $\{-5, 2\}$
d. $\left\{ -1, \frac{2}{5} \right\}$ e. None of these
7. The solutions of $5x^2 + 8x - 4 = 0$ are
a. $x = \frac{2}{5}, x = -2$ b. $x = -\frac{2}{5}, x = 2$ c. $x = \frac{1}{5}, x = 4$
d. $x = \frac{2}{5}, x = 2$ e. None of these
8. The solution set of $4x^2 - 81 = 0$ is
a. $\left\{ \frac{9}{2} \right\}$ b. $\left\{ \frac{9}{4}, \frac{9}{4} \right\}$ c. $\left\{ -\frac{9}{2}, \frac{9}{2} \right\}$
d. $\left\{ -\frac{9}{2} \right\}$ e. None of these

9. The solution set of $6x^2 - 49 = 0$ is
- a. $\{-\frac{6}{7}, \frac{6}{7}\}$ b. $\{\frac{7}{6}\}$ c. $\{-\frac{7\sqrt{6}}{6}, \frac{7\sqrt{6}}{6}\}$
d. $\{-\frac{7}{6}\}$ e. None of these
10. The hypotenuse of a right triangle is 4 cm longer than one leg and 2 cm longer than the other leg. Thus, the length of the hypotenuse is
- a. 12 cm b. 10 cm c. 6 cm
d. 9 cm e. None of these
11. Suppose you rent a car for one day at the rate of \$25 per day plus 20 cents per mile. How many miles could you drive for a rental charge of \$90?
- a. 300 b. 350 c. 400
d. 325 e. None of these
12. It is known that corresponding sides of similar rectangles are proportional. A given rectangle is 5 in. by 8 in. and the shorter side of a similar rectangle is 11 in. long. The length of the other side of the second rectangle is
- a. 16.5 in. b. 17 in. c. $17\frac{3}{5}$ in.
d. 18.6 in. e. None of these
13. The cost of gasoline per hour for running a certain car is directly proportional to the square of the speed. If the cost is \$2 per hr for a speed of 40 mph, what is the cost per hr for a speed of 60 mph?
- a. \$4.00 b. \$3.50 c. \$4.25
d. \$4.50 e. None of these
14. At constant temperature, the volume of an enclosed gas varies inversely as the pressure. If the volume is 12 cubic inches when the pressure is 24 pounds per square inch, what is the volume when the pressure is increased to 36 pounds per square inch?
- a. 6 in.^3 b. 8 in.^3 c. 9 in.^3
d. 7 in.^3 e. None of these
15. If the replacement set is the set of integers, the solution set of $x + 4 = 7$ is
- a. -3 b. 3 c. $\{-3\}$
d. $\{3\}$ e. None of these

16. If the replacement set is the set of integers, the solution set of $x - 4 = -9$ is

- a. 5
b. {5}
c. -5
d. {-5}
e. None of these

17. If the replacement set is the set of integers, the solution set of $x + 9 > 11$ is

- a. {2, 3, 4, ...}
b. 2, 3, 4, ...
c. {3, 4, 5, ...}
d. 3, 4, 5, ...
e. None of these

18. If the replacement set is the set of integers, the solution set of $x + 4 \leq -4 + 3x$ is

- a. {3, 4, 5, ...}
b. {4, 5, 6, ...}
c. $\{x \mid x \leq 4\}$
d. $\{x \mid x \geq 4\}$
e. None of these

19. The solution of $2 + x = 5 - 8x$ is

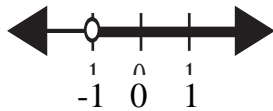
- a. $x = 3$
b. $x = -1/3$
c. $x = 1/3$
d. $x = -3$
e. None of these

20. The solution set of $2x - 2 \leq 8 - 3x$ is

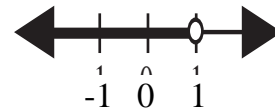
- a. $x \leq 2$
b. $\{x \mid x \geq 2\}$
c. $x \geq 2$
d. $\{x \mid x \leq 2\}$
e. None of these

21. The graph of the solution set of $x + 4 \geq 1 - 2x$ is

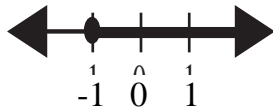
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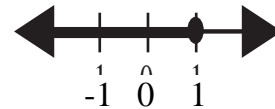
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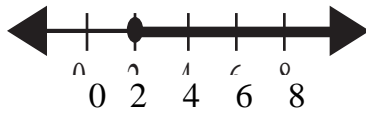
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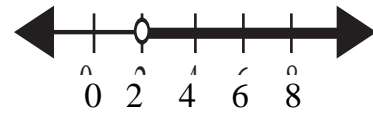
e. None of these

22. The graph of the solution set of the compound statement $x - 1 \geq 3$ **and** $x > -4$ is

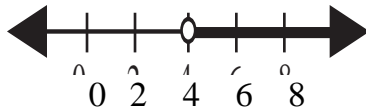
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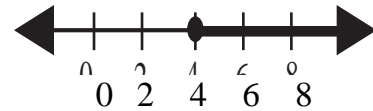
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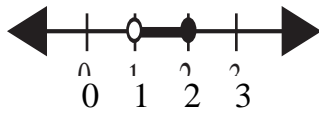
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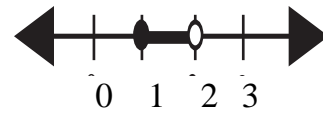
e. None of these

23. The graph of the solution set of the compound statement $x - 2 \leq 0$ **and** $x + 1 > 2$ is

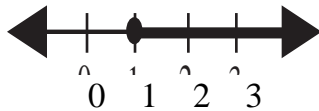
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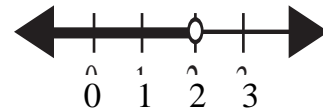
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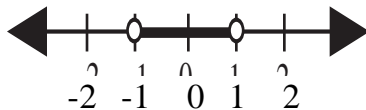
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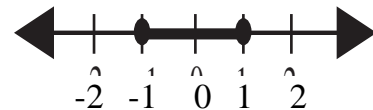
e. None of these

24. The graph of the solution set of the compound statement $x \geq 1$ **or** $x + 2 \leq 1$ is

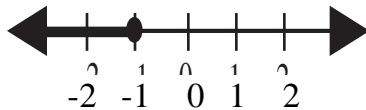
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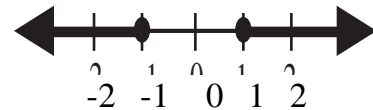
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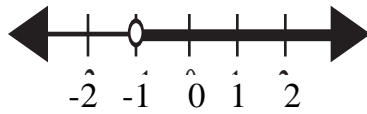
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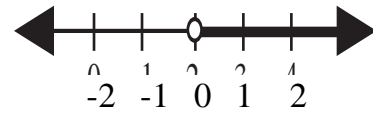
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25. The graph of the solution set of the compound statement $x + 1 \leq 0$ or $x - 1 < -3$ is

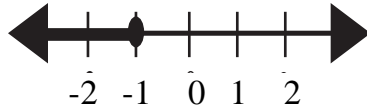
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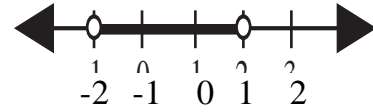
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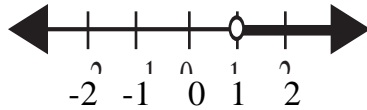
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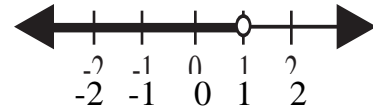
e. None of these

26. The graph of the solution set of $|x| < 1$ is

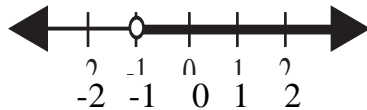
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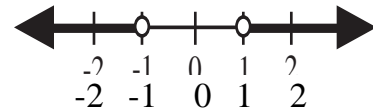
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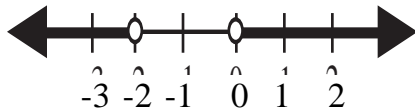
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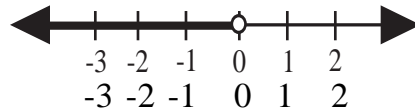
e. None of these

27. The graph of the solution set of $|x + 1| > 1$ is

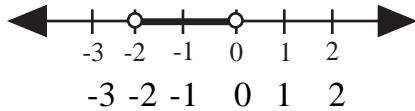
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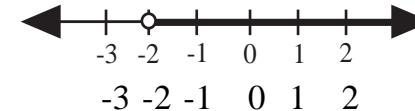
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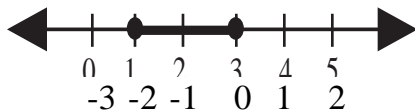
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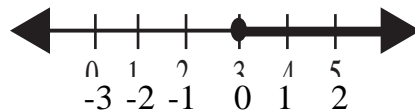
e. None of these

28. The graph of the solution set of $|x - 2| \leq 1$ is

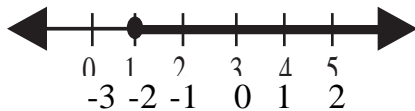
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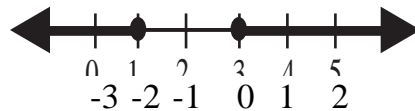
b.



c.



d.



e. None of these