

Test 1F

1. Evaluate the given expression if $x = 25$, $y = 10$, $w = 40$, and $z = 11$.

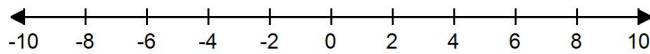
$$(x - y)^2 + 10wz$$

2. Evaluate the given expression if $k = -47$.

$$5 |k + 10| - |4k|$$

Solve the given inequality. Describe the solution set using the set-builder or interval notation. Then, graph the solution set on a number line.

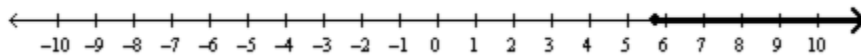
3. $m + 4 \geq 10$



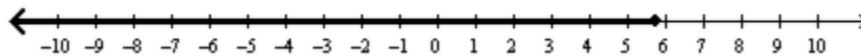
Indicate the answer choice that best completes the statement or answers the question.

4. $p \leq \frac{p + 52}{10}$

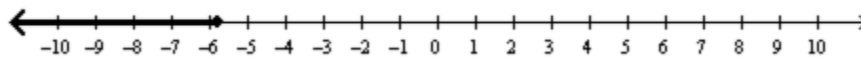
a. The solution set is $\left[\frac{52}{9}, \infty \right)$.



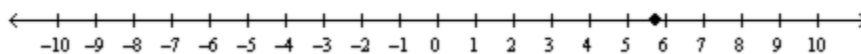
b. The solution set is $\left(-\infty, \frac{52}{9} \right]$.



c. The solution set is $\left(-\infty, -\frac{52}{9} \right]$.



d. The solution set is $\left[\frac{52}{9} \right]$.



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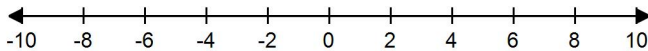
Simplify the given expression.

5. $9(0.4x + 0.4y) + 19(0.6x - 0.7y)$

- a.
- $3.6x - 13.5y$
- b.
- $15 + 16.9y$
- c.
- $15x + 3.6y$
- d.
- $15x - 9.7y$

Solve the given inequality. Describe the solution set using the set-builder AND interval notation. Then, graph the solution set on a number line.

6. $\frac{7-p}{2} \leq 1$



Indicate the answer choice that best completes the statement or answers the question.

Kevin is responsible for delivering sacks of grains to a grocery shop on the tenth floor of a departmental store. Each sack weighs 364 pounds and Kevin weighs 150 pounds. The capacity of the elevator is 2000 pounds.

7. Write the inequality to represent the number of sacks of grains that can be delivered safely.
- a. $75 + 182b \leq 1000$ b. $75 + 182b \geq 1000$
c. $75 + 182b < 1000$ d. $75 + 182b = 1000$

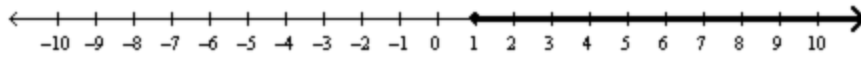
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Solve the given inequality. Graph the solution set on a number line and state your answer in set-builder notation.

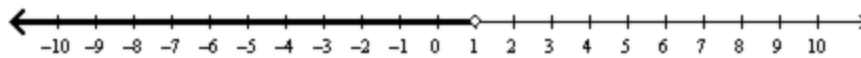
Indicate the answer choice that best completes the statement or answers the question.

8. $4m - 2 < 8$ or $6m + 2 \geq 8$

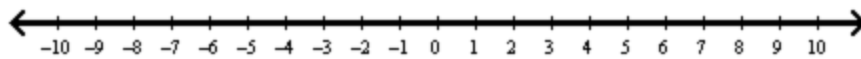
a. $\{m \mid m \geq 1\}$



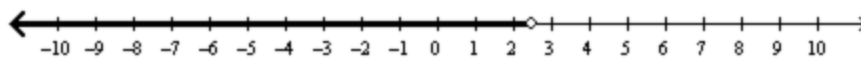
b. $\{m \mid m < 1\}$



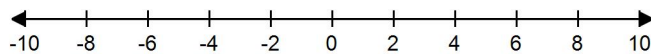
c. $\{m \mid m \in \mathbb{R}\}$



d. $\{m \mid m < 2.5\}$



9. $|p - 3| < 9$

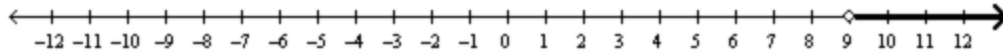


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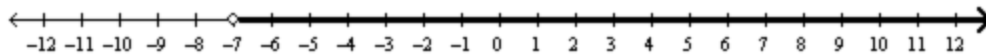
Indicate the answer choice that best completes the statement or answers the question.

10. $p + 4 > -3$ and $p + 1 < 10$

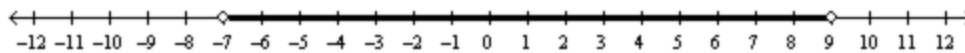
a. $\{p \mid p > 9\}$



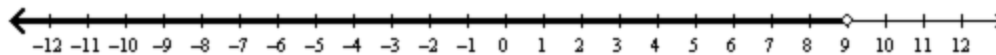
b. $\{p \mid p > -7\}$



c. $\{p \mid -7 < p < 9\}$



d. $\{p \mid p < 9\}$



Solve the given equation. Check your solution.

Indicate the answer choice that best completes the statement or answers the question.

11. $|m - 5| = 30$

- a. $\{35, 29\}$ b. $\{-35, -25\}$ c. $\{35, 25\}$ d. $\{35, -25\}$

12. $4|2s + 5| = 36$

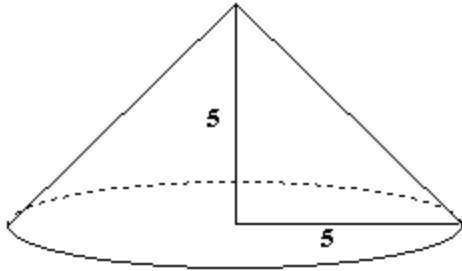
Indicate the answer choice that best completes the statement or answers the question.

13. $12|2s + 5| = 96$

- a. $\{1.5, 6.5\}$ b. $\{45.5, -6.5\}$ c. $\{-1.5, -6.5\}$ d. $\{1.5, -6.5\}$

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14. The formula to calculate the curved surface area of a cone is $C = \pi r l$. Also $l^2 = r^2 + h^2$, where r is the radius, h is the height, and l is the slant height of the cone. Find the curved surface area, if the radius and the height of the cone are 5 centimeters. Assume the value of $\pi \approx 3.14$. Round your answer to the nearest hundredth.



- a. 78.50 b. 111.02 c. 785.00 d. 1110.10
15. Summarize the similarities and differences between *and* compound inequalities and *or* compound inequalities.
(Complete Sentence: 1 Pt, Similarities: 2 Pts, Differences: 2 Pts)

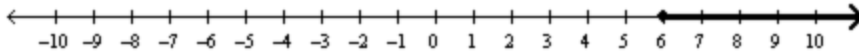
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Answer Key

1. 4625

2. -3

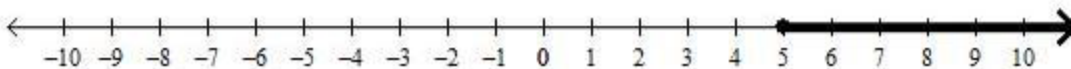
3. The solution set is $\{m \mid m \geq 6\}$.



4. b

5. d

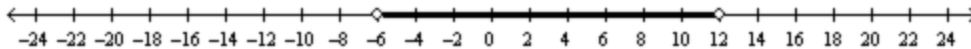
6. The solution set is $[5, \infty)$.



7. a

8. c

9. The solution set is $\{p \mid -6 < p < 12\}$.



10. c

11. d

12. $\{2, -7\}$

13. d

14. b

15. The similarity between the *and* and *or* compound inequalities is that both have a range of values that make the inequality true. The differences are that the *and* inequality points to the left and the *or* inequality points to the right. Another difference is that for the *and* inequality, the range of values that make the inequality true lie in between the endpoints of the graph and for the *or* inequality, the range of values begin at the endpoints and extend to positive and negative infinity.