1. The equation 3x+2y=6 represents a line. This line does NOT pass through which of the four quadrants?

select
I
select
II
select
III
select
IV

2. **What is the area of the triangle formed by the lines $y = -2x - 2$, $y = -\frac{1}{2}x + 8$, and $y = 0$?**

select 45
select 48
select 6
select 15

3. **Which of the following points does the line $y = \frac{3}{2}x + 4$ NOT pass through?**

select (6, 12)
select (2, 7)
select (14, 25)
select (-5, -3.5)

1. **Upon discovering a tree virus in British Columbia, scientists created a model to predict the tree population in a certain forest: $T = x(0.73)^m$, where T represents he number of trees after m months since the virus's discovery, and x represents the original number of trees that existed in the forest when the scientists made the discovery. Assuming that the model is correct, which of the following best describes the impact of the virus on the forest?**

select The number of trees in the forest is decreasing by 73% each month.

select The number of trees in the forest is decreasing by 27 each month.

select The number of trees in the forest is decreasing by 27% each month.

select The number of trees in the forest is decreasing by 73 each month.

2. **Upon discovering a tree virus in British Columbia, scientists created a model to predict the tree population in a certain forest: $T = x(0.73)^m$, where T represents he number of trees after m months since the virus's discovery, and x represents the original number of trees that existed in the forest when the scientists made the discovery. Assuming that the model is correct, in which of the following years will the number of trees lost be the greatest?**

select The tree loss will be the same each year.

select The first year after scientists discovered the virus.

select The second year after scientists discovered the virus.

select The third year after the scientists discovered the virus.

3. **Shawn is purchasing t-shirts for himself and the members of his soccer team. The online vendor uses the formula $T = 12s + 10$ to represent the total cost a customer pays, inclusive of the price of each shirt plus a one-time shipping fee that is the same regardless of the number of shirts purchased. If T represents the total amount that Shawn will pay for purchasing s shirts, what is the role of the number 12 in this formula?**

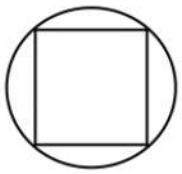
select The total cost that Shawn pays before the shipping cost is applied

select The total number of shirts he purchases

select The amount of the shipping fee

select The price he pays for each shirt

4.



A square is inscribed within a circle as shown above. If the area of the square is 32 square inches, what is the area of the circle, in square inches?

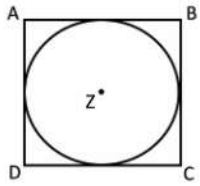
select 16π

select 32π

select 8π

select 24π

5.



A circle centered on point Z is inscribed within square ABCD as shown above. If the area of square ABCD is 64 square centimeters, what is the area (in square centimeters) of the circle?

select 8π

select 16π

select 32π

select 64π

6. A mobile app video game has gone viral, with its number of users tripling each day for the past several weeks. What is the ratio of its number of users today to its number of users exactly one week ago?

select 21:1

2187:1

select 243:1

select 27:1

7. $|x+1| > 7$

Which of the following provides the full solution set to the inequality above?

select $x > 8, x < -6$

select $x > 6, x < -8$

select $x > 6, x < 7$

select $x > -6, x < 8$

8. $|2x+1| < 13$

Which of the following provides the full solution set for the inequality above?

select $x > 7, x < -6$

select $-7 < x < 6$

select $x < -7, x > 6$

select $-6 < x < 7$

9. $|5-2x| > 9$

Which of the following represents the full solution set for the inequality above?

select $x < -7, x > 2$

select $x < -2, x > 7$

select $-2 < x < 7$

select $-7 < x < 2$

10. $|3x-4| > 2x+1$

Which of the following represents the complete solution set for the inequality above?

select $x > 5, x < \frac{3}{5}$

select $\frac{3}{5} < x < 5$

select $-5 < x < \frac{3}{5}$

select $x < -5, x > \frac{3}{5}$

11. $|3x-8| > 2x+5$

Which of the following represents the complete solution set for the inequality above?

select $\frac{3}{5} < x < 13$

select $\frac{3}{5} < x < \frac{13}{5}$

select $x < \frac{3}{5}, x > 13$

select $x < -\frac{3}{5}, x > \frac{13}{5}$

12. $|2x+1| > 5x-4$

Which of the following represents the complete solution set for the inequality above?

select $\frac{5}{3} < x < 7$

select $3 < x < 7$

select $\frac{3}{7} < x < \frac{5}{3}$

select $x < \frac{5}{3}$

13. If $3x - y > 6$ and $y - 2x > 9$, which of the following must be true?

select	$y < 10$
select	$x > 15$
select	$x < 3$
select	$x > y$

14. $x + y > 9$
$x - y > 3$
Based on the system of inequalities above, which of the following must be true?

select	$x + y > x - y$
select	$y > 3$
select	$x > 6$
select	$y < 0$

15. If x > r and y < s, which of the following must also be true?

select	$x - y > r - s$
select	$xs > ry$
select	$x - s > r - y$
select	$x + y > r + s$