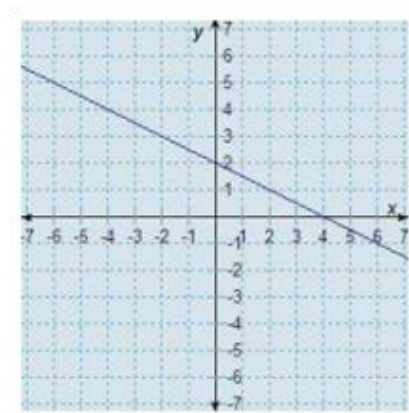


Grade for Fall _____: 9th 10th 11th (circle one)

Circle the best choice *or* fill in the answer. **Show all your work!**

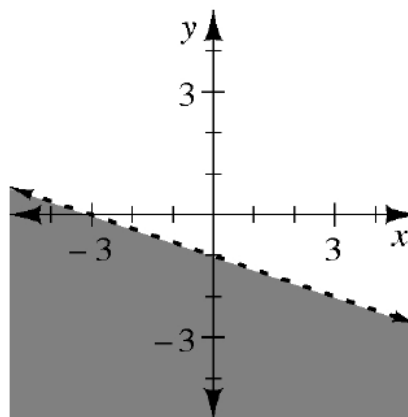
1. What is the slope and y-intercept of the equation represented by the following graph?

- a. slope = 2, y-intercept = $-\frac{1}{2}$
- b. slope = -2, y-intercept = $-\frac{1}{2}$
- c. slope = $-\frac{1}{2}$, y-intercept = 2
- d. slope = $\frac{1}{2}$, y-intercept = 2
- e. slope = -1, y-intercept = 2
- f. I have not learned this yet



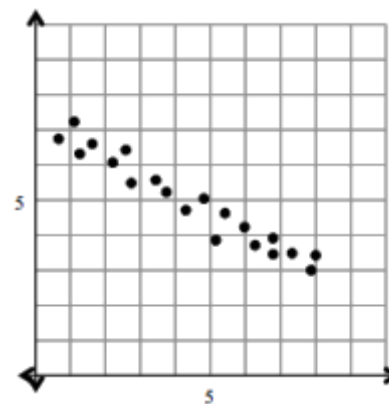
2. Write the inequality represented by the graph. _____

- a. I have not learned this yet.



3. The correlation r for the data in this scatterplot is

- A. near -1
- B. clearly negative but not near -1.
- C. near 0.
- D. clearly positive but not near 1.
- E. near 1.
- F. I have not learned this yet.



Explain: _____

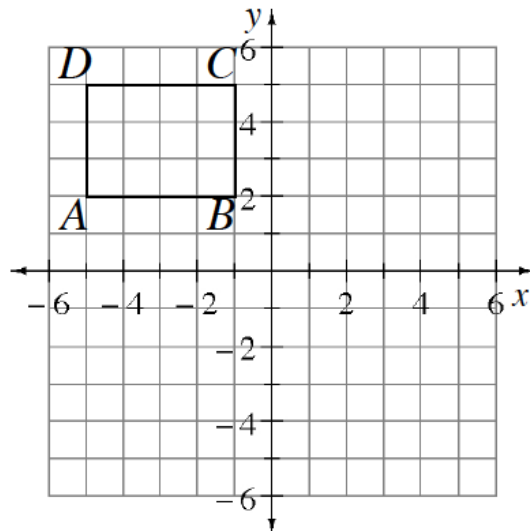
4. A heater in a room increases the temperature of the room at a constant rate. Write an equation that will determine the temperature in degrees F after x minutes have passed.

Minutes passed after heater is turned on (x)	Temperature in the Room (degrees F) (y)
0	50
2	55
4	60
6	65
8	70
10	75
12	80

- a. $y = 2.5x$
- b. $y = 0.4x$
- c. $y = 2.5x + 50$
- d. $y = 0.4x + 50$
- e. $y = 0.4x + 65$
- f. I have not learned this yet.

5. Multiply and simplify the polynomial: $(x - 5)(2x + 3) =$ _____

6. Rotate ABCD clockwise around the origin 90° to create A'B'C'D'.



7. . Which of the following equations represents the sequence 5, 10, 20, 40, ...? Explain your reasoning or show the work that helped you decide on your answer.

A. $t(n) = 2n$

B. $t(n) = 2.5(2)^n$

C. $t(n) = 5n + 5$

D. $t(n) = 5^n$

E. I haven't learned this yet.

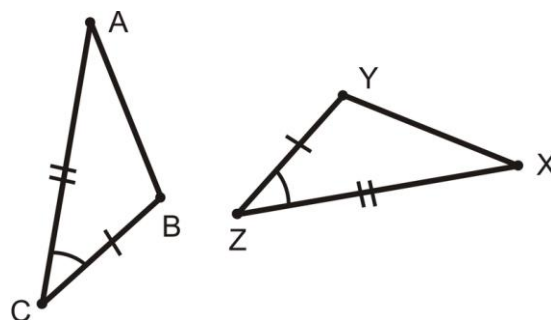
8. Consider the system of equations:

$$\begin{aligned} x &= -2y - 13 \\ 12x + 5y &= -4 \end{aligned}$$

- a. The solution to this system of equations is (_____, _____)
 b. I haven't learned this yet

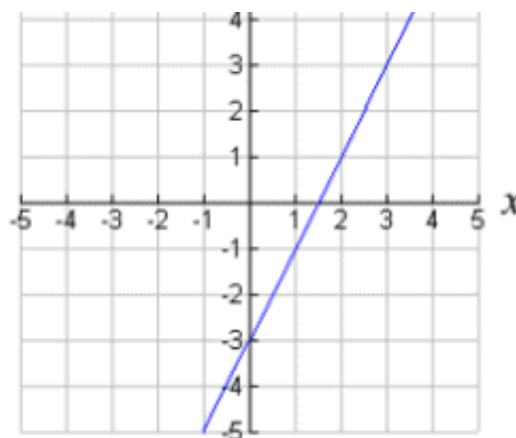
9. Which of the following methods can be used to prove $\triangle ABC \cong \triangle XYZ$?

- a. SSS
- b. SAS
- c. SSA
- d. ASA
- e. I haven't learned this yet



10. Which of the following equations is **perpendicular** to the equation of the line graphed at right?

- a. $y = -\frac{1}{2}x - 2$
- b. $y = 2x - 3$
- c. $y = -2x + 3$
- d. $y = \frac{1}{2}x + 2$
- e. I haven't learned this yet



11. Factor completely: $3x^2 - 17x - 28$

- a. _____
- b. I have not learned this yet

12. What are the x – and y- intercepts for the rule $y = (x - 4)(x + 3)$? Record as coordinates.

- a. x-intercepts _____ , _____
- b. y-intercept _____

13. Write the simplified form of $64^{1/2}$

a. Simplified form _____

b. I haven't learned this yet

14. Select the correct answer.

$$y = x^2 + 2x - 1 \quad y = 3x + 5$$

The two pair of points representing the solution set of this system of equations are:

(_____ , _____) and (_____ , _____)

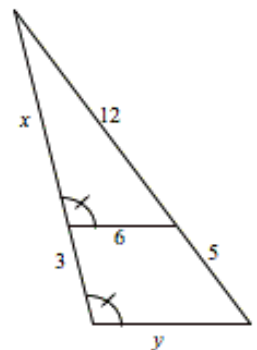
I have not learned this yet _____

15. Calculate x and y.

$x =$ _____

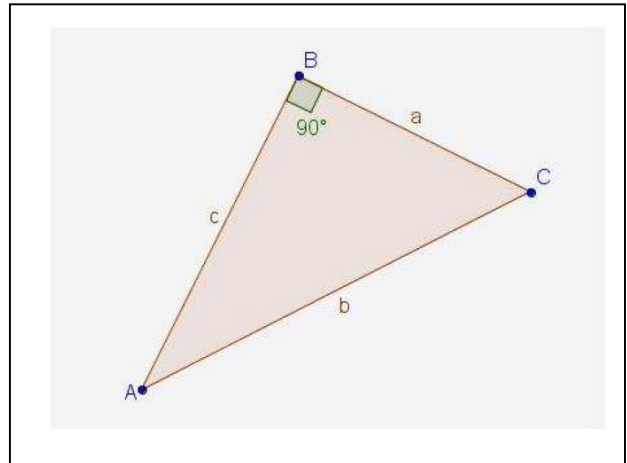
$y =$ _____

I have not learned this yet _____



16. In $\triangle ABC$, which trigonometric ratio has the value $\frac{a}{c}$?

- a. $\tan C$
- b. $\cos A$
- c. $\tan A$
- d. $\cos C$
- e. $\sin C$
- f. I have not learned this yet

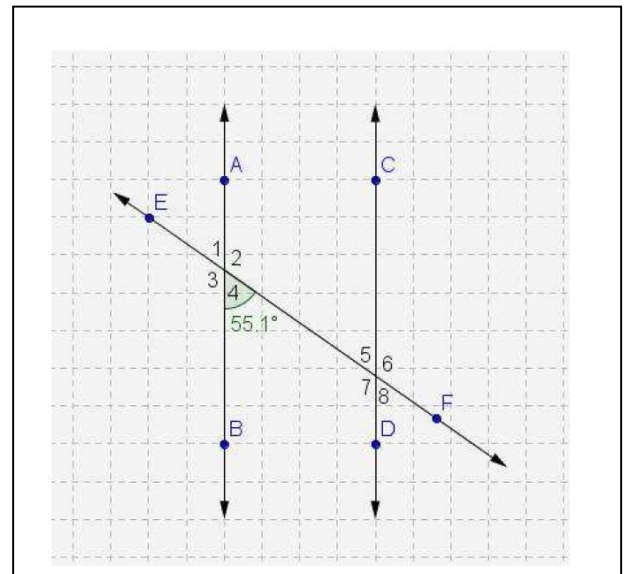


17. Transversal \overleftrightarrow{EF} cuts parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} as shown in the diagram, and $m\angle 4 = 55.1$.
What are $m\angle 5$ and $m\angle 7$?

$m\angle 5 =$ _____

$m\angle 7 =$ _____

I haven't learned this yet _____



18. A circle with the equation $(x - 1)^2 + (y + 4)^2 = 9$ has

Center = _____

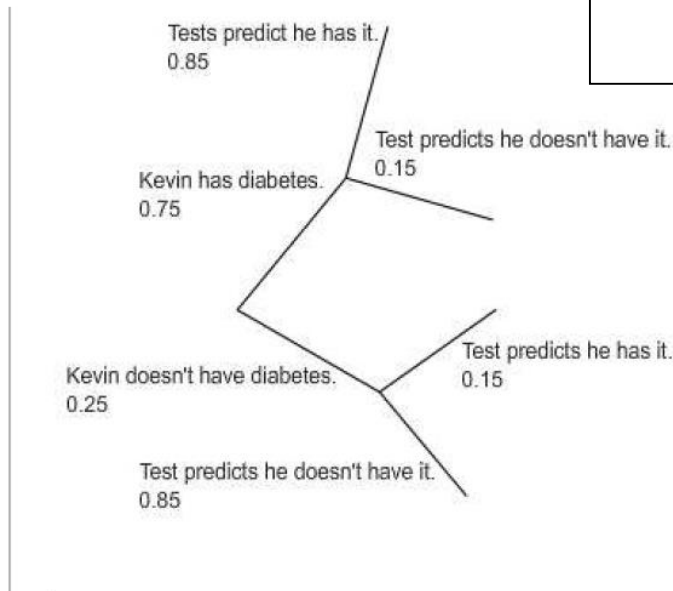
Radius = _____

I haven't learned this yet _____

19. Given the tree diagram: Match the probability to the description

- a. 00375 _____
- b. 0.6375 _____
- c. 0.1125 _____
- d. 0.2125 _____

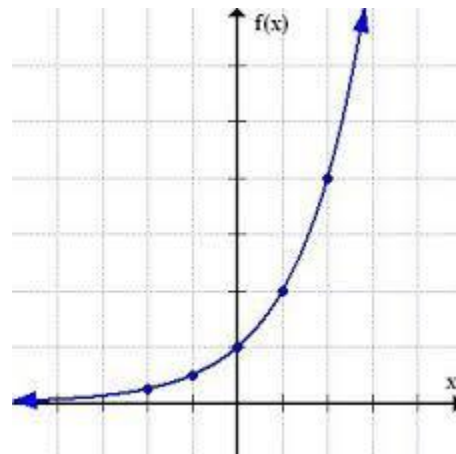
- i. The probability that Kevin has diabetes and the test predicts the opposite to be true.
- ii. The probability that Kevin does not have diabetes and the test predicts this correctly.
- iii. The probability that Kevin has diabetes and the test predicts he has diabetes.
- iv. The probability that Kevin does not have diabetes and the test predicts he has diabetes.



I haven't learned this yet _____

20. The equation of this graph is :

- a. $f(x) = x + 1$
- b. $f(x) = x^2 + 1$
- c. $f(x) = 2^x + 1$
- d. $f(x) = 2^x$
- e. I haven't learned this yet

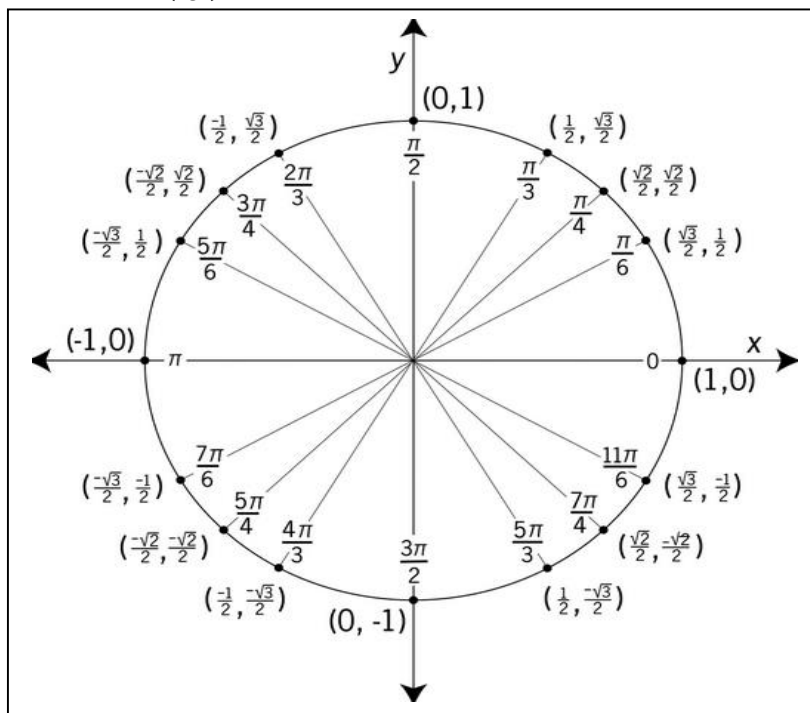


21. What are the real zeroes of $x^3 + 6x^2 - 9x - 54$?

- a. 1, 2, 27
- b. 3, -3, -6
- c. -6, 3, 6
- d. 2, -1, 18
- e. 3, 3, -6
- f. I haven't learned this yet

22. Use the unit circle to find the exact value of $\cos\left(\frac{7\pi}{6}\right)$.

- a. $\frac{\pi}{6}$
- b. $\frac{7\pi}{6}$
- c. $\frac{1}{2}$
- d. $-\frac{1}{2}$
- e. $-\frac{\sqrt{3}}{2}$
- f. I haven't learned this yet



23. $f(x) = |x|$ and $g(x) = |x| + 3$

The transformation applied to get the graph of $g(x)$ from the graph of $f(x)$ is

- a. a vertical transformation of 3 units upward
- b. a vertical transformation of 3 units downward
- c. a horizontal transformation of 3 units to the left
- d. a horizontal transformation of 3 units to the right
- e. I haven't learned this yet

24. Evaluate each logarithmic expression.

a. $\log_2 8 =$ _____

b. $\log_2 \frac{1}{4} =$ _____

c. $\log_2 1 =$ _____

d. I haven't learned this yet _____

25. If $f(x) = 3x - 4$ and $g(x) = x^2$, find $f(g(x))$

a. $f(g(x)) = 3x^3 - 4x^2$

b. $f(g(x)) = 3x^2 - 4$

c. $f(g(x)) = (3x - 4)^2$

d. $f(g(x)) = x^2 + 3x - 4$

e. I haven't learned this yet

26. Tyrone scored 700 on the mathematics portion of the SAT test. The distribution of SAT scores in a reference population is normally distributed with a mean of 500 and a standard deviation of 100. Dwight took the ACT mathematics test and scored 29. The ACT scores are normally distributed with a mean of 18 and a standard deviation of 6. Assuming that both tests measure the same kind of ability, who has the higher score and why?

a. Tyrone, because 700 is larger than 29

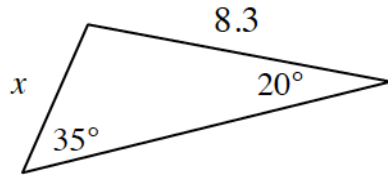
b. Dwight, because $\frac{29}{18} > \frac{700}{500}$

c. Tyrone, because he scored 2 standard deviations above the mean while Dwight did not

d. Dwight, because his percentile is higher than Tyrone's percentile

e. I haven't learned this yet

27. Determine the value of x in the triangle below. The diagrams is not drawn to scale.



$x =$ _____

I haven't learned this yet _____

28. The inverse of $f(x) = (x - 2)^3 + 1$ is

- a. $f^{-1}(x) = \sqrt[3]{x+2} - 1$
- b. $f^{-1}(x) = (x - 1)^3 + 2$
- c. $f^{-1}(x) = (x + 2)^3 - 1$
- d. $f^{-1}(x) = \sqrt[3]{x-1} + 2$
- e. I haven't learned this yet

29. Solve the inequality $\frac{1}{2}(x - 1)^2 + 5 \leq 13$. Graph the solution set on the number line below.

- a. $x \geq 5$ or $x \leq -3$
- b. $x \geq 3$ or $x \leq -5$
- c. $-3 \leq x \leq 5$
- d. $-5 \leq x \leq 3$
- e. I haven't learned this yet



30. Match each function with its graph. Write a letter in the spaces provided.

a. $y = \sin(2x) + 2$

b. $y = 2\cos(x - \frac{\pi}{2}) + 2$

c. $y = 2\sin(x + 2)$

d. $y = 2\sin(2x + 2)$

e. I haven't learned this yet

