

Math I EOC Review
G-GPE.4, G-GPE.5, G-GPE.6, G-GPE.7, G-GMD.3

Distance Formula $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Midpoint Formula $(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2})$

Slope $\frac{y_2-y_1}{x_2-x_1}$

Perimeter – add up all the sides

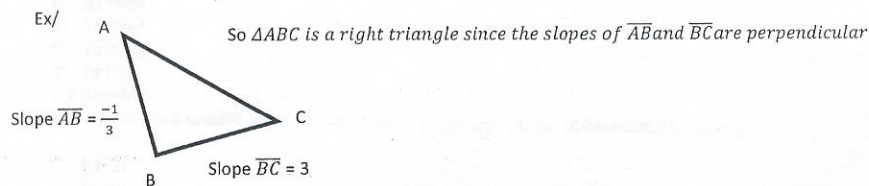
Parallel – Same slope

Perpendicular – flip the slope and change the sign

Ex/ The perpendicular slope to $\frac{-2}{3}$ is $\frac{3}{2}$. The perpendicular slope to 5 (since 5 is the same as $\frac{5}{1}$) is $\frac{-1}{5}$.

The distance from the center of a circle to any point that lies on the circle is the radius.

A right triangle is defined as a triangle with 2 sides that are perpendicular.



Area of a triangle: $\sqrt{s(s - \text{side } 1)(s - \text{side } 2)(s - \text{side } 3)}$ where s is $\frac{1}{2}$ of the perimeter

Properties of:

Square
 4 right angles
 4 equal sides
 Opposite sides are parallel

Rectangle
 4 right angles
 Opposite sides are parallel and equal

Parallelogram
 Opposite sides are parallel
 Opposite sides are equal
 Opposite angles are equal

Volume of:

Pyramid $V = \frac{1}{3}Bh$

Sphere $V = \frac{4}{3}\pi r^3$

Cone $V = \frac{1}{3}\pi r^2 h$

Cylinder $V = \pi r^2 h$ *This is the only formula that will not be given

- What is the midpoint of the line segment with endpoints at (12, 7) and (8, 3)?
 A. (2, 2)
 B. (4, 4)
 C. (10, 5)
 D. (20, 10)
- The endpoints of \overline{PQ} are (-2, 8) and (6, 12). What are the coordinates of the midpoint of \overline{PQ} ?
 A. (5, 7)
 B. (4, 10)
 C. (4, 4)
 D. (2, 10)
- A circle has a diameter that extends from (4, -6) to (-8, 10). What are the coordinates of the center of the circle?
 A. (-2, 2)
 B. (-3, 6)
 C. (-4, 4)
 D. (-6, 8)
- The center of a circle is at $Q(0, 6)$. A radius is drawn from Q to $P(4, 6)$. What are the coordinates of the endpoint of the diameter that includes segment PQ ?
 A. (0, 2)
 B. (0, 10)
 C. (-4, 6)
 D. (6, -4)
- Which is an equation of the line that passes through the point (2, 0) and is parallel to the graph of $y = -4x + 1$?
 A. $y = -4x + 2$
 B. $y = -4x + 8$
 C. $y = -\frac{1}{4}x - \frac{1}{2}$
 D. $y = -\frac{1}{4}x + \frac{1}{2}$
- Which equation graphs a line parallel to $y = 2x + 1$ and has a y-intercept of -5?
 A. $2x + y = -5$
 B. $2x - y = -5$
 C. $2x + y = 5$
 D. $2x - y = 5$
- Which is an equation of a line perpendicular to the graph of $x - (3y + 2) = 4$?
 A. $y = \frac{-1}{3}x + 4$
 B. $y = -3x + 1.5$
 C. $y = 3x + 2$
 D. $y = \frac{1}{3}x + 5$

8. Which is an equation of a line that is perpendicular to the graph of $9x - 3y = -10$?
- $3x - y = 10$
 - $4x + 12y = 11$
 - $5x - 15y = 6$
 - $6x + 2y = 9$
9. Rectangle WXYZ has coordinates W(3, 5) X(6, 3) Y(2, -3). What are the coordinates of point Z?
- (0, 0)
 - (0, 1)
 - (-1, 0)
 - (-1, -1)
10. Three vertices of a parallelogram are located at (-5, 0), (1, -1), and (3, 2). What are the coordinates of the fourth vertex?
- (-6, 2)
 - (-5, 2)
 - (-4, 3)
 - (-3, 3)
11. The vertices of a triangle are (4, 3), (8, 4), and (4, 10). What is the *approximate* perimeter of the triangle?
- 14 units
 - 18 units
 - 22 units
 - 33 units
12. Triangle PQR has vertices at (-3, -3), (-2, 3), and (4, -1). What is the *approximate* perimeter of triangle PQR?
- 21 units
 - 19 units
 - 15 units
 - 12 units
13. What is the area of a triangle with vertices at (1, 4), (5, 1), and (8, 5)?
- 12.5 units²
 - 17.5 units²
 - 25 units²
 - 35 units²
14. What is the area of a triangle with vertices at (2, 4), (3, -1), and (-2, -2)?
- 12.7 units²
 - 17.3 units²
 - 26.2 units²
 - 161.9 units²
15. A balloon in the shape of a sphere has a radius of 6 inches. What is the *approximate* volume of the balloon? (Use $V = \frac{4}{3}\pi r^3$, where V is volume and r is radius.)
- 151 in³
 - 452 in³
 - 905 in³
 - 2,714 in³
16. The base of a square pyramid has a side length of 10 inches. The height of the prism is 12 inches. What is the volume of the pyramid? (Use $V = \frac{1}{3}Bh$, where B is the area of the base, and h is the height.)
- 480 cubic inches
 - 400 cubic inches
 - 120 cubic inches
 - 40 cubic inches
17. A cone has a diameter that measures 10 cm and is 6 inches tall. What is the *approximate* volume, V, of the cone? (Use $V = \frac{1}{3}\pi r^2 h$, where r is the radius and h is the height.)
- 157.1 cm³
 - 188.5 cm³
 - 471.2 cm³
 - 628.3 cm³
18. A cylinder has a radius of 5 cm and a volume of 471 cubic cm. What is the *approximate* height of the cylinder?
- 6 cm
 - 15 cm
 - 19 cm
 - 30 cm
19. A circle is centered at (-5, 2) and has a radius of 4. Which point lies on the circle?
- (-5, -2)
 - (-3, 4)
 - (-2, -1)
 - (3, -3)
20. Which term best describes the shape that has vertices at (0, 0), (2, 3), (-2, 4), and (-4, 1)?
- Parallelogram
 - Rhombus
 - Rectangle
 - Square
21. Triangle EFG is graphed on a coordinate axis. Angle F is a right angle. The slope of line segment EF is $\frac{-4}{5}$. What is the slope of line segment FG?
- $\frac{5}{4}$
 - $\frac{4}{5}$
 - $\frac{-4}{5}$
 - $\frac{-5}{4}$