ST. JOSEPH'S ACADEMY
2024 Summer Reading

HONORS GEOMETRY

Teacher: Mrs. Lisa Shah

2024 SUMMER READINESS PACKET - REQUIRED FOR ENTRY INTO HONORS GEOMETRY

Hello soon to be students! Welcome to Honors Geometry! This review packet contains topics that you should be comfortable with PRIOR to the start of the school year. It contains primarily Algebra 1 topics, but does have some basic geometry concepts with which you should be comfortable. The purpose of this is to make your year in Honors Geometry progress more smoothly. Geometry moves at a quick pace (whether you're in Honors or regular) and requires you to have a strong algebra foundation. What is crucial is that you **understand** this material and don't just rush through it to complete it.

Here are some basic guidelines you should follow:

1. This packet is due on the first day of school. You must show ALL work!

2. I will not grade every single problem for accuracy. However, if it looks like you do not understand a particular concept, I will be giving it back to you to fix.

3. Do NOT copy anyone's packet. It will not help you at all. Trust me on this. Photomath or any other math solving AI is strictly prohibited.

4. Don't rush through the packet to complete it right after the end of the school year. Try to spread it out throughout the summer so it stays fresh in your mind.

5. Since you all come from different schools, there may be some topics that your school didn't cover as well as others. Here are some helpful sites that can be truly beneficial!

www.khanacademy.org (sign up for an account – it's free)

www.ixl.com (if you have an account from last year)

6. If there are topics which you truly have no idea, it would be beneficial to either teach yourself or find someone that can tutor you.

If you have any questions, please contact me: lshah@sja1840.org.

I am excited to meet you/ see you again next year!

Lisa Shah

Summer Readiness Packet (before Honors Geo) Name_____

You must show ALL WORK!

Evaluate each expression.

1) $(6 + 9) \div (1 + 2) - 2 \div 2$

2) $-4 - 6 + 5 \cdot 5 + 2$

Evaluate each using the values given.

3) $z + z^2 - 3 + x + z$; use $x = -2$, and $z = -1$

4) $2 \times \frac{h}{k}$; use $h = 1$, and $k = -\frac{1}{5}$

Simplify each expression.

5) $5p - 8(1 - 6p)$

Solve each equation for the indicated variable.

6) $xc = r - d$, for x

7) $\frac{m}{a} = \frac{n}{p}$, for a

Solve each equation.

8) $-149 = -6(-6 - 6n) - 5$

9) $3(-6r - 4) = 96$

10) $2(4 + 7n) - 7n = 2(1 + 4n)$

11) $n - \frac{9}{7} = -\frac{11}{4}n + \frac{69}{28}$

Solve each proportion.

12) $\frac{2}{p} = \frac{6}{4}$

13) $\frac{10}{n-6} = \frac{8}{5}$

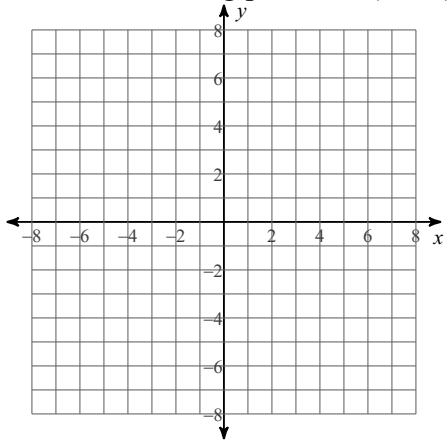
14) If you can type 345 words every 3 minutes, how many words can you type in 20 minutes?

Solve each problem.

15) What is 85% of 160?

16) If your meal costs $30 and you are going to tip 20%, what is the final cost of your meal?

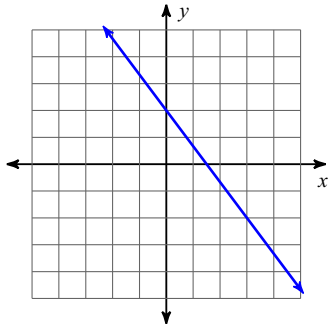
17) Plot the following points: L(–2, 5), M(0, 7), S(3, –6)



18) Is the point (–2, 12) a solution to y = -5x + 1?

Find the slope of each line.

19)



Find the slope of the line through each pair of points.

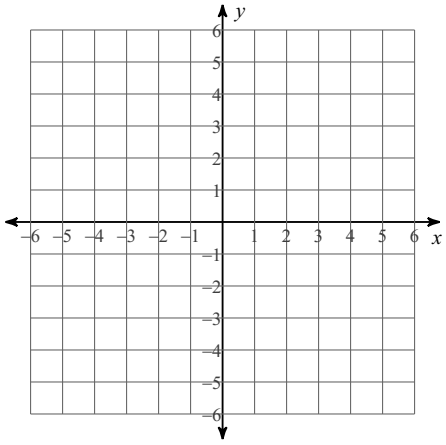
20) $(-1, 6), (2, 20)$

Find the slope of each line.

21) $8x - 3y = 12$

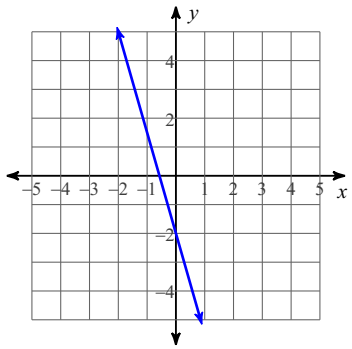
Sketch the graph of each line.

22) $3x + 5y = 10$



Write the slope-intercept form of the equation of each line.

23)



Write the slope-intercept form of the equation of the line through the given point with the given slope. Leave your answers in reduced fractions when necessary.

24) through: $(1, 5)$, slope $= \frac{10}{3}$

Write the slope-intercept form of the equation of the line through the given points.

25) through: $(-4, -5)$ and $(0, 3)$

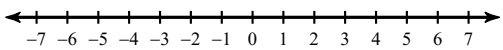
Write the slope-intercept form of the equation of the line described.

26) through: $(-4, 5)$, parallel to $y = -\frac{2}{9}x$

27) through: $(4, 5)$, perp. to $y = -\frac{4}{7}x + 2$

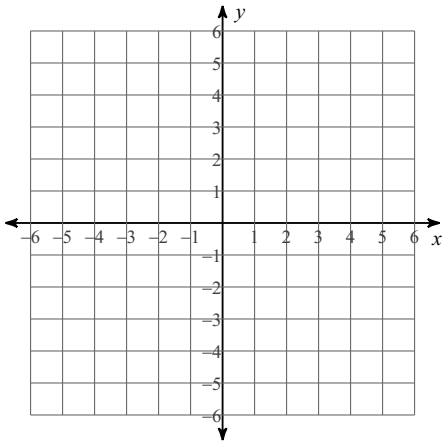
Draw a graph for each inequality.

28) $-3 < a$



Sketch the graph of each linear inequality.

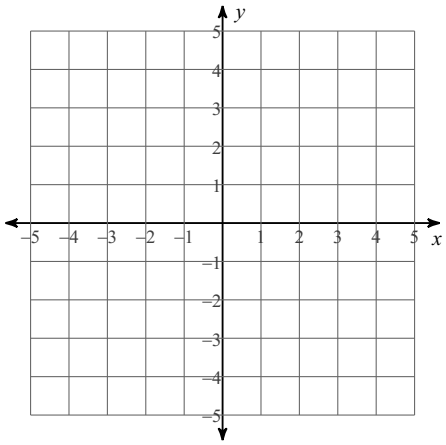
29) $y > -\frac{6}{5}x + 3$



Sketch the solution to each system of inequalities.

30) $y < -\frac{5}{3}x + 2$

$y \leq -3$



Simplify. Your answer should contain only positive exponents.

31) $2a^6b^6 \cdot 6b^2$

32) $\left(4a^{-6}b^6\right)^4$

33) $\left(2a^{6}\right)^{-2}$

34) $\dfrac{4x^{-4}}{x^{2} \cdot 2x^{-3}}$

Solve each equation.

35) $\dfrac{\left|-2+k\right|}{7} = 5$

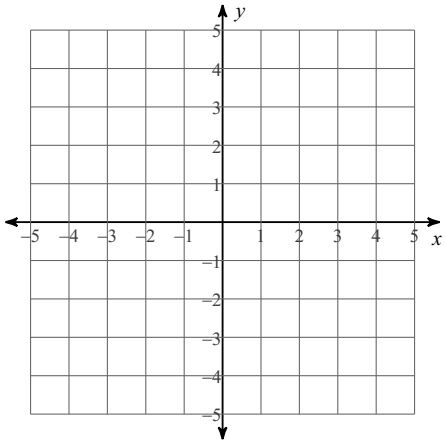
Solve each inequality.

36) $5 - 4x > -3$

37) $\dfrac{p}{2} + 5 \geq 1$

Solve each system by graphing.

38) $3x + 2y = 2$
$x + 2y = 6$



Solve each system by substitution.

39) $-2x - y = 1$
$y = -3x - 3$

Solve each system by elimination.

40) $6x - 3y = -12$
$10x + 2y = -6$

41) $8x - 72y = 24$
$10x - 90y = 30$

42) Write two equations for the following situation and solve.

Perry and James are selling cookie dough for a school fundraiser. Customers can buy packages of white chocolate chip cookie dough and packages of gingerbread cookie dough. Perry sold 9 packages of white chocolate chip cookie dough and 3 packages of gingerbread cookie dough for a total of $78. James sold 5 packages of white chocolate chip cookie dough and 6 packages of gingerbread cookie dough for a total of $104. Find the cost each of one package of white chocolate chip cookie dough and one package of gingerbread cookie dough.

Find each product.

43) $(3n - 8)(2n + 3)$

44) $(6k + 5)(2k^2 - 3k + 7)$

Factor each completely.

45) $x^2 - 10x + 16$

46) $x^2 + 6xy - 16y^2$

47) $6a^2 + 30a$

48) $10m^2 + 37m + 30$

Solve each equation by factoring.

49) $k^2 - 5k + 4 = 0$

50) $b^2 + 10b + 21 = -3$

51) $7a^2 + 21 = -52a$

52) $98r^2 - 14 = 21r$

Simplify.

53) $\sqrt{64}$

54) $\sqrt{5} \cdot -4\sqrt{10}$

55) $\sqrt{9} \cdot -\sqrt{2}$

56) $\dfrac{3\sqrt{8}}{4\sqrt{100}}$

57) $\dfrac{\sqrt{4}}{\sqrt{3}}$

58) $\dfrac{2\sqrt{4}}{4\sqrt{5}}$

59) $-\dfrac{5}{3\sqrt{2}}$

60) $-\sqrt{6} - \sqrt{24}$

For #61-#64, solve each equation with the quadratic formula.

61) $4x^2 - 4x = 35$

62) $2a^2 - 39 = -7a$

63) $n^2 - 6n = 16$

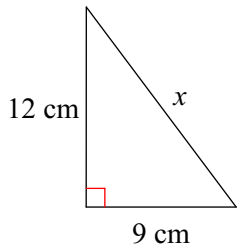
64) $2x^2 = 9 + 6x$

65) $f(x) = 3x - 3$; Find $f(-10)$

66) What is the domain and range of the following? {(-1,4), (2,6), (7,-3)}

Use pythagorean theorem to find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

67)



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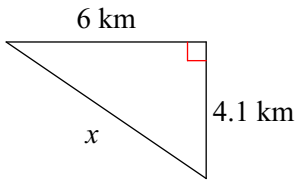
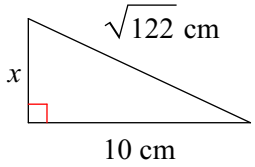


Use pythagorean theorem to find the missing side of each triangle. Leave your answers in simplest radical form.

69)



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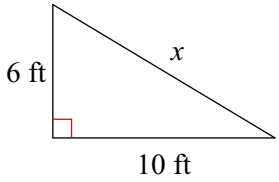
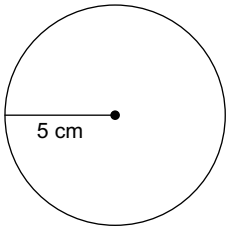


Find the area of each. Leave your answers in exact (pi) form.

71)



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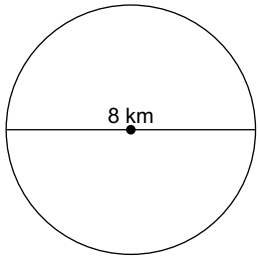
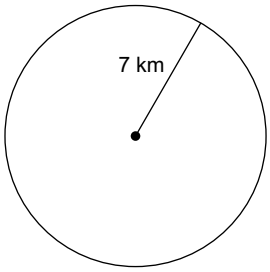


Find the circumference of each circle. Leave your answers in exact (pi) form.

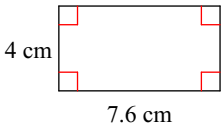
73)



74) area = 121π m²

Find the area and perimeter.

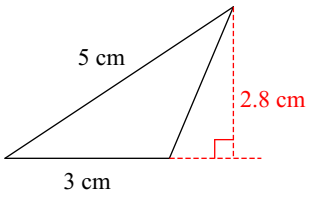
75)



76) Find the area of a square whose perimeter is 28 inches.

Find the area of each and the perimeter of #77.

77)



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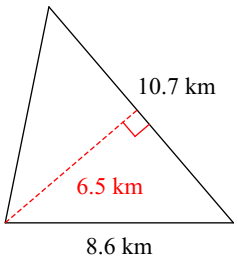
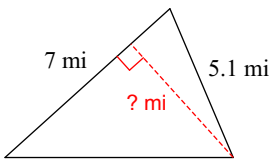


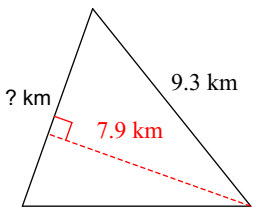
Find the missing measurement. Round your answer to the nearest tenth.

79)



Area = 16.8 mi²

80)



Area = 30.4 km²