

Name \_\_\_\_\_

# Trumbull High School Honors Geometry / Algebra II B Summer Packet

This summer packet is for students entering Honors Geometry / Algebra II B. All of this information will be used at some point in the upcoming year. These topics should have been covered in previous years (not necessarily last year). You are responsible for all of this material and will be assessed on it. You are expected to bring this completed packet with you to class on the first day of school.

If you have questions during the summer, please email one of the following teachers. Email will be checked periodically, and questions will be addressed.

Tom Zultowski—Teacher

[tzultows@trumbullps.org](mailto:tzultows@trumbullps.org)

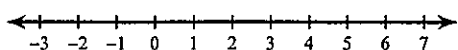
Fran Basbagill—Department Chair

[fbasbagi@trumbullps.org](mailto:fbasbagi@trumbullps.org)

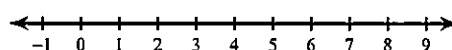
Summer Packet Part I

Solve each inequality and graph its solution.

1)  $-8 - (-5b + 3) \leq 8(1 + 3b)$



2)  $-100 > -5(3a + 8)$



Solve each equation.

3)  $|k - 2| = 4$

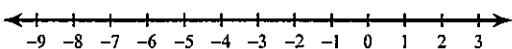
4)  $\left| \frac{r}{5} - 5 \right| = -3$

5)  $|6 + 9x| = -75$

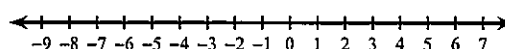
6)  $3 - 4|n - 4| = -53$

Solve each inequality and graph its solution.

7)  $|-1 - 10n| \leq 9$



8)  $6|x + 1| > 30$



**Perform the indicated operation.**

9)  $f(n) = -4n + 2$   
 $g(n) = 3n + 1$   
Find  $f(n) + g(n)$

10)  $h(x) = x^2 + 2$   
 $g(x) = 4x + 4$   
Find  $(h \cdot g)(x)$

11)  $g(x) = 2x - 3$   
 $f(x) = -3x - 2$   
Find  $\left(\frac{g}{f}\right)(10)$

12)  $g(x) = -2x^2 + 4$   
 $h(x) = 4x + 3$   
Find  $g(8) + h(8)$

13)  $g(x) = x + 1$   
 $f(x) = x^2 - 4$   
Find  $g(f(0))$

14)  $h(a) = -a - 5$   
 $g(a) = 4a + 5$   
Find  $(h \circ g)(-5)$

15)  $f(x) = x^2 + 2 + 2x$   
 $g(x) = -4x$   
Find  $(f \circ g)(x)$

16)  $g(t) = 2t + 2$   
 $f(t) = t + 3$   
Find  $g(f(t))$

17)  $h(t) = 3t^2 + 2t$   
 $g(t) = t + 3$   
Find  $(h \circ g)(t + 1)$

18)  $g(a) = a^2 - 3a$   
 $f(a) = 3a + 5$   
Find  $(g \circ f)(-4a)$

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

19)  $10x - 3y = -6$

20)  $y - 5 = -(x + 1)$

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

21) through:  $(-2, -4)$ , slope = 4

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

22) through:  $(2, -5)$  and  $(0, -4)$

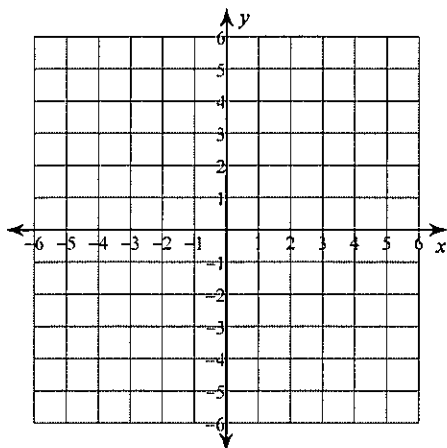
Write the slope-intercept form of the equation of the line described.

23) through:  $(-4, 0)$ , parallel to  $y = -\frac{5}{6}x - 2$

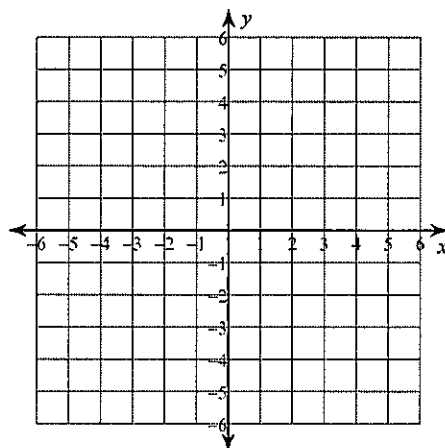
24) through:  $(-5, 3)$ , perp. to  $y = -\frac{5}{2}x - 1$

Sketch the graph of each linear inequality.

25)  $y \geq -x + 4$

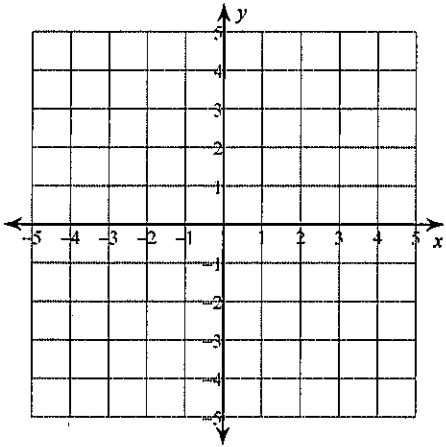


26)  $3x - y < -5$

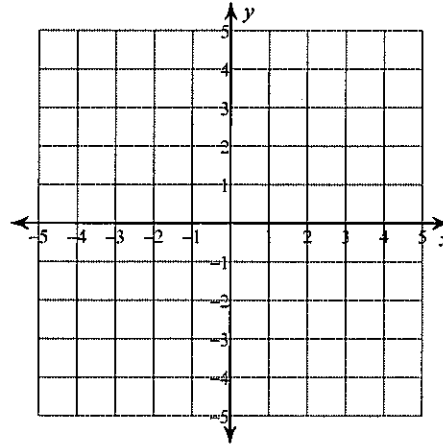


**Solve each system by graphing.**

27)  $y = \frac{1}{2}x - 3$   
 $y = -2x + 2$



28)  $x - y = 2$   
 $x + 4y = 12$



**Solve each system by elimination.**

29)  $8x - 2y = 8$   
 $9x - 5y = -13$

**Solve each system by substitution.**

30)  $-2x + 6y = -4$   
 $-5x + y = 4$

- 31) Gabriella and Norachai are selling wrapping paper for a school fundraiser. Customers can buy rolls of plain wrapping paper and rolls of holiday wrapping paper. Gabriella sold 9 rolls of plain wrapping paper and 13 rolls of holiday wrapping paper for a total of \$359. Norachai sold 13 rolls of plain wrapping paper and 1 roll of holiday wrapping paper for a total of \$163. What is the cost each of one roll of plain wrapping paper and one roll of holiday wrapping paper?

**Simplify. Your answer should contain only positive exponents.**

32)  $4x \cdot 4x^2y^3 \cdot 4x^4y^3$

33)  $(u^3v^{-4} \cdot 2u^{-1}v^4)^{-2}$

34)  $\frac{3yx^4 \cdot x^3y^0}{3x^4y^{-3}}$

35)  $\frac{(-b^2)^2 \cdot (b^{-1})^4}{(2b^4)^{-4}}$

**Simplify.**

36)  $\sqrt{147m^3}$

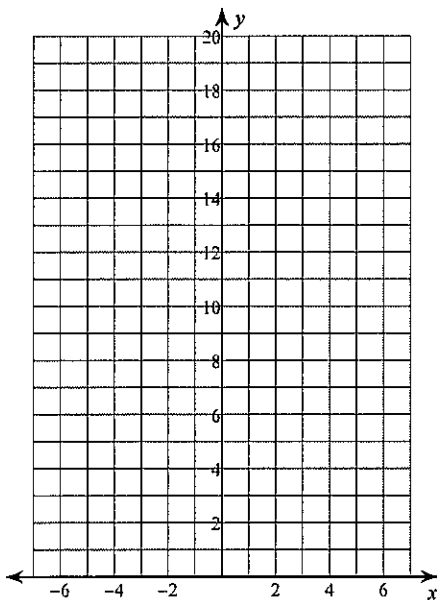
37)  $\sqrt{48a^3b^5}$

38)  $-5\sqrt{32m^2}$

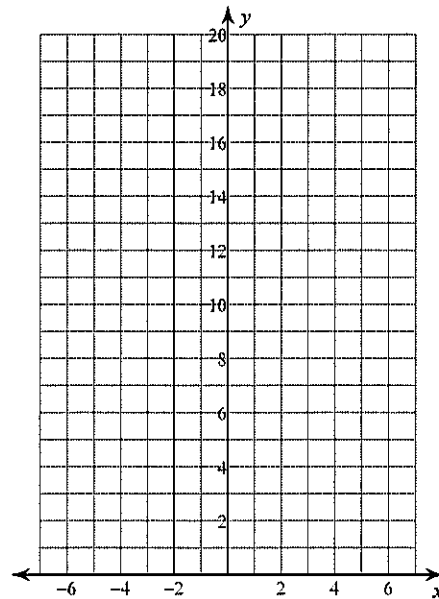
39)  $-9\sqrt{40x^5y^4}$

**Sketch the graph of each function.**

40)  $y = 4 \cdot \left(\frac{1}{2}\right)^x$



41)  $y = 5 \cdot 2^x$



**Simplify each expression.**

42)  $(4x^4 + 6x) + (5x^3 - 6x^4 - 6x^2) + (8 + 6x^3)$

43)  $(7r^4 - 8) - (r^4 + r - 8)$

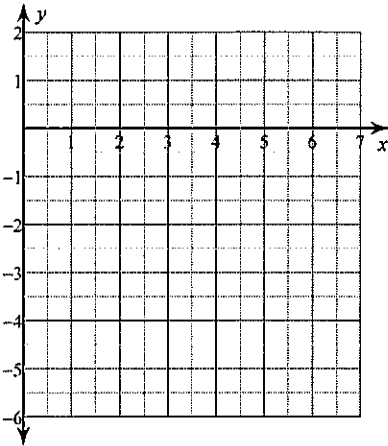
**Find each product.**

44)  $(2a - 6b)(7a - 6b)$

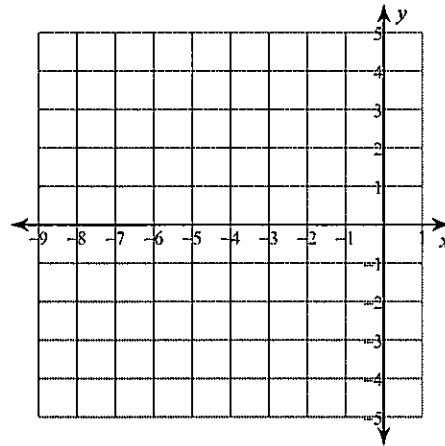
45)  $(a - 4)(8a + 5)$

**Sketch the graph of each function.**

46)  $y = x^2 - 8x + 12$



47)  $y = -2x^2 - 8x - 4$



**Factor each completely.**

48)  $-6n^2 + 6n + 12$

49)  $-x^4 + 10x^3 - 21x^2$

50)  $2b^2 - 19b + 45$

51)  $3x^2 + 19x + 20$

$$52) 8v^2 + 2v - 15$$

$$53) 75b^2 - 27$$

**Solve each equation by factoring.**

$$54) p^2 + 4p = 0$$

$$55) b^2 - b - 6 = 0$$

$$56) 3k^2 + 14k - 20 = 4$$

$$57) 6x^2 - 44x + 7 = -7$$

**Solve each equation with the quadratic formula. Exact answers only.**

$$58) 4x^2 + 12x - 23 = 0$$

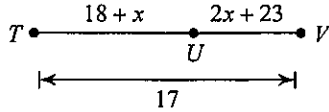
$$59) 2n^2 + 9n - 56 = 0$$



Summer Packet Part II

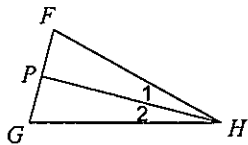
Find the length indicated.

1) Find  $UV$



Each figure shows a triangle with one of its angle bisectors.

2) Find  $m\angle 1$  if  $m\angle 2 = x + 7$  and  $m\angle FHG = 3x + 7$ .



Find the distance between each pair of points. Leave answers in simplest radical form.

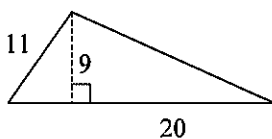
3)  $(-4, -5), (-1, -8)$

Find the midpoint of the line segment with the given endpoints.

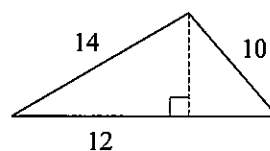
4)  $(8, -3), (5, 9)$

Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

5)

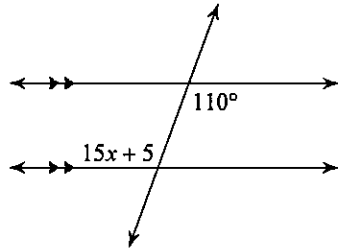


6)

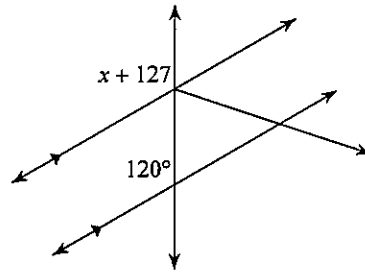


Solve for  $x$ .

7)

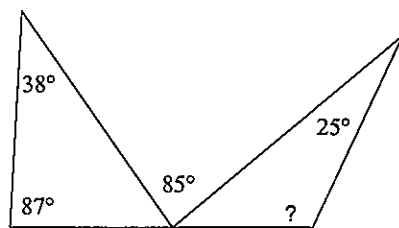


8)

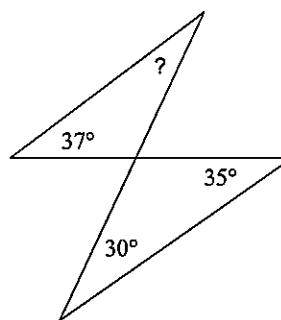


Find the measure of each angle indicated.

9)

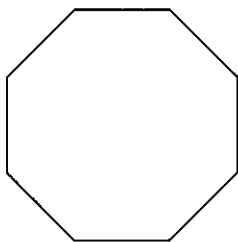


10)



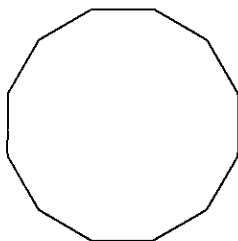
Find the interior angle sum for each polygon. Round your answer to the nearest tenth if necessary.

11)



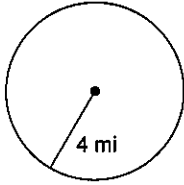
Find the measure of one exterior angle in each regular polygon. Round your answer to the nearest tenth if necessary.

12)



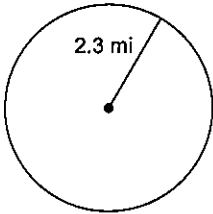
Find the area of each.

13)



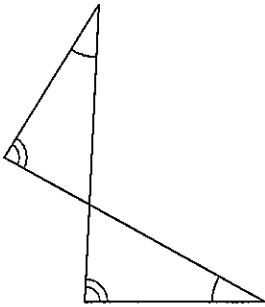
Find the circumference of each circle. Use your calculator's value of  $\pi$ . Round your answer to the nearest tenth.

14)

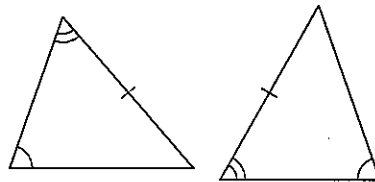


State if the two triangles are congruent. If they are, state how you know.

15)

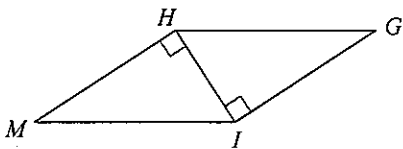


16)

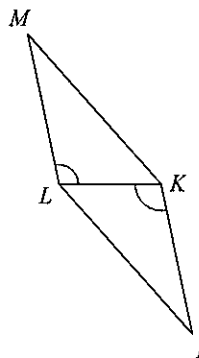


State what additional information is required in order to know that the triangles are congruent for the reason given.

17) HL

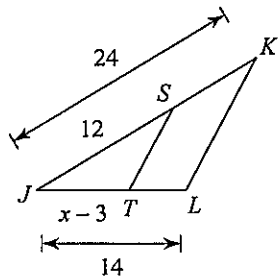


18) ASA

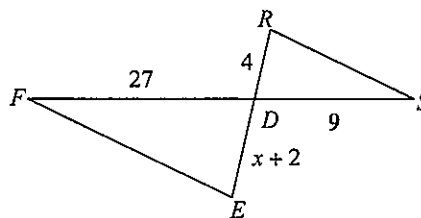


Solve for  $x$ . The triangles in each pair are similar.

19)

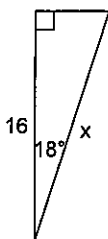


20)  $\triangle DEF \sim \triangle DRS$

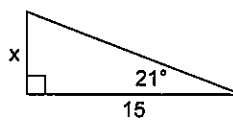


Find the missing side. Round to the nearest tenth.

21)

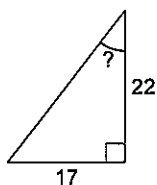


22)

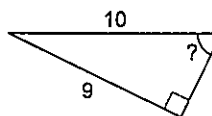


Find the measure of the indicated angle to the nearest degree.

23)

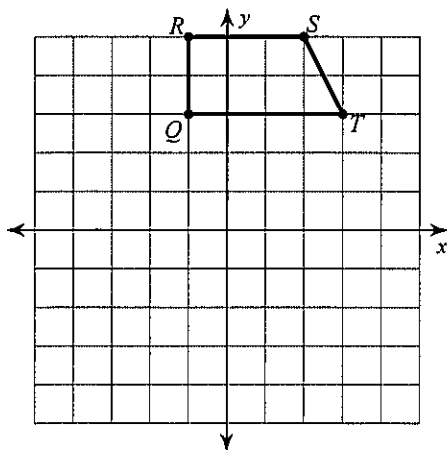


24)



Graph the image of the figure using the transformation given.

25) reflection across  $y = 2$



26) translation:  $(-3, 2)$

