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# Trumbull High School Honors Algebra I / Geo A Summer Packet 

## Welcome to Trumbull High School!

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.

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Simplify the following expressions. (no calculator except \#4)

1. $\frac{5-1}{2-3}$
2. $5+10(25-8)$
3. $\frac{2}{3}(5-2)^{2}+3$
4. $2.5 \cdot 0.5^{2}-1.63(.02-4.7)^{3}$
5. $\frac{3}{8} \cdot \frac{5}{9} \div\left(-\frac{5}{6}\right)+\frac{7}{4}$
6. Evaluate the expression $\frac{2}{5} x$ when $x=\frac{3}{5}$
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7. $\frac{6}{-\frac{9}{14}}$
8. $\frac{-\frac{2}{5}}{-\frac{8}{15}}$
9. $3 \frac{2}{9}+8 \frac{2}{3}$
10. $2 \frac{1}{2}-5 \frac{3}{4}$
11. Evaluate the expression $(2 a-3 b)^{3}$ when $a=3, b=1$.

Simplify the following expressions. (no calculator)
12. $-2 x+5-6 x-11$
13. $-5(3 x-2)$
14. $2(a-8)+7(a-1)$
15. $5 b-7(b+4)$
16. $\frac{16 x-24}{4}$
17. $\frac{x}{6}+\frac{5}{2} x$
18. $4 x^{2}+7 x-1+3-5 x^{2}$
19. $4 m^{3}-4 p+6 m+13 p+p^{2}-6 m$
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Solve the following equations. (Calculator may only be used for \#24.) Leave answers as fractions.
20. $\frac{x}{5}=9$
21. $v-(-4)=|-6|$
22. $10-r=15$
23. $-16=28 p$
24. $-52(23.4-u)=289.4$ Round to the nearest hundredth.
25. $17=3(6-b)$
26. $-\frac{3}{4} m=24$
27. $\frac{1}{4}(12 x-4)=-1+3 x$
28. $9(x-3)=10+9 x$
29. $\frac{2 x-7}{5}=3$
30. $-\frac{t}{9}+(-7)=-14$
31. $-6 x+24=4 x-15(x-3)$
32. $12^{2}=\frac{1}{2}[(310-x)-x]$

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33. $\frac{5}{x}=\frac{3}{2}$
34. $\frac{x-3}{x}=\frac{9}{10}$
35. $\frac{5 x}{7 x-3}=\frac{4}{3}$
36. $6=\frac{144}{x}$

## Write an algebraic equations and solve.

37. Twice number added to 7 is identical to 29 . What is the number?
38. Five less than the product of a number and thirteen is equivalent to the same number increased by one. What is the number?
39. Andrew drove to his grandmother's house in Pennsylvania which is 280 miles away. It took Andrew 4 hours and 15 minutes to get there. What was Andrew's average speed?

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40. Isabella gets a $\$ 15$ a week allowance. Her parents give her an additional $\$ 1.30$ for each chore she completes throughout the week. Last week Isabella earned $\$ 31.90$. How many chores did she complete?
41. Jenny needed to get her laptop repaired. The service fee was $\$ 15$, and then it cost an extra $\$ 21.50$ per hour. The final cost was $\$ 90.25$. How long did it take to repair her laptop?
42. Vanessa has 1,080 pictures on her phone and she adds 8 photos every week. Andrea has 960 photos on her phone, but she adds 20 photos per week. After how many weeks will Vanessa and Andrea have the same amount photos?

## Complete each sequence. Explain your reasoning.

43. $2,6,10,14$, $\qquad$
44. 240,120, 60,30, $\qquad$
45. $-2,6,-18,54$, $\qquad$ __
46. $0,1,4,9$, $\qquad$ ,
47. $37,26,15,4$, $\qquad$ ,
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## Graph each equation.

48. $y=\frac{5}{3} x-6$

49. $y-4=3 x$

50. $y=8$

51. $y=-4 x$

52. $-4 x-8 y=32$

53. $x=-3$


Write the equations of the line in slope-intercept form.
54. the slope is -6 and the $y$-intercept is $(0,-8)$
55. $m=\frac{7}{3}, b=1$
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Find the slope of the line that passes through the given points.
56. (10, -3), (5, -2)
57. $(6,2),(7,5)$
58. $(5,4),(5,-9)$
59. $(3,-6),(0,-6)$

Solve the system of equations by graphing.
60. $\begin{aligned} y & =\frac{1}{3} x-3 \\ y & =-x+1\end{aligned}$

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y=-x+1
$$




Solve the system of equations by substitution or elimination.
62. $\begin{aligned} & 2 x+3 y=20 \\ & -2 x+y=4\end{aligned}$

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Use the following data about test scores to answer each question. $78,100,92,90,80,54,85,96,97,90$
63. Find the mean.
64. Find the median.
65. Find the mode.
66. Find the range.

## Percents.

67. What is $55 \%$ of 72 ?
68. 38 is what percent of 95 ?
69. $15 \%$ of what number is 60 ?
70. What is $250 \%$ of 8 ?
71. The price of a pen increased from $\$ .40$ to $\$ .45$. What was the percent increase?
72. A new pair of jeans cost $\$ 38$. How much would they cost after tax? $(\mathrm{CT} \operatorname{tax}=6.35 \%)$
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73. Fran and her friends went to Necatrinewave to get frozen yogurt. They spent $\$ 19.34$, but Fran had a $15 \%$ discount. What was the final cost (without tax)?
74. Alison started raising baby chickens. She started with 24 baby chickens this year and he hoping to increase her total by about $40 \%$ each year. If all goes to plan, about how many chickens will she have next year?
75. Matt's dad started a savings account for Matt when he was 10 years old with $\$ 300$. The money in the account increases at a rate of $7 \%$ compounded yearly. If Matt is 15 years old now, how much money is in the account?

Use the Pythagorean Theorem to find the length of the missing side. Round to the nearest tenth.

77.

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Find the area of each figure. (Hint: you may need to look up the formulas if you do not remember.)

81.

82.

83.


85.


Find the surface area and volume of the rectangular prism.
86.

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Find the missing angle measure. Then state the angle relationship used.

88.


Solve for $x$.
88.

89.


Graph the image of the figure using the information given.
90. Reflection over the $x$-axis.

91. Translation by $\langle 4,-3\rangle$


