# Advanced Algebra I

## Summer Math
## Skills Review

2019-2020

Please bring completed packet to the first day of class on August 13, 2019 (B day).

Use a separate sheet of paper if needed. Make sure to follow directions and show your thinking!

Congratulations on your placement into Advanced Algebra I!

This packet needs to be completed by the first day of school, August 13 (B day). This packet will be counted as a large homework assignment and a large quiz will be given over the concepts. There will be a few days of review over the packet before the quiz will be given. All of the material in this packet is review from your junior high math courses.
If you are having trouble remembering how to complete some of the problems, please look at khanacademy.org. You will find some great videos that will help right away.

## REQUIRED CALCULATOR:

TI-84 PLUS

**** If anyone loses their packet, they can print another one off at www.mchs.net. They can be found under Students & Parents, then Honors/AP Information or under your graduating class page (Class of 2023).****

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Name_____

# Rounding Numbers

Date_____ Period____

**Round each to the place indicated.**

1) 8,632,051

2) 25,952,938

3) 803,119

4) 73,693

5) 2,461,612,242

6) 789,132,377

7) 9,885,659,260; billions

8) 2,628,259; thousands

9) 347,168; ten thousands

10) 9,727,322,054; billions

11) 1,399,179; thousands

12) 271,156,694; millions

13) 44.5443495

14) 5.3373959

15) 8.7495980

16) 74.91

17) 0.72091

18) 23.0368

19) 9.3113; thousandths

20) 6.9788; tenths

21) 6.3761; tenths

22) 1.7354948; hundred-thousandths

23) 1.495485; thousandths

24) 8.121; hundredths

Name_____

# Adding and Subtracting Positive and Negative Numbers

Date_____ Period____

**Evaluate each expression.**

1) $(-2) + 3$

2) $(-14) + (-7)$

3) $3 - (-8)$

4) $(-9) + 14$

5) $(-8) - (-2)$

6) $5 + (-8)$

7) $(-27) - 24$

8) $(-41) + (-40)$

9) $38 - (-17)$

10) $(-44) + (-9)$

11) $(-16) - (-36)$

12) $(-6) - 24$

13) $(-16) - 6 + (-5)$

14) $15 - 13 + 2$

15) $16 - (-13) - (-5)$

16) $(-7) - (-2) - 9$

17) $(-11)-(-14)+7$

18) $7+(-1)+12-7$

19) $6+(-7)+(-5)-(-2)$

20) $(-3)+5+(-5)+12$

21) $(-11)-8+1-(-6)$

22) $10-(-10)-7-5$

23) $6-3.98$

24) $5.8+(-2.5)$

25) $1.8-(-3.7)$

26) $7-2.8$

27) $(-0.8)+(-7.2)-5.4$

28) $1.7-(-0.8)+4.013$

29) $\left(-\frac{3}{2}\right)+\frac{8}{5}$

30) $\frac{7}{4}-\left(-\frac{1}{2}\right)$

31) $\left(-\frac{1}{5}\right)+\frac{7}{4}$

32) $\frac{2}{5}-\frac{4}{5}$

 Name_____

# Add/Subtracting Fractions and Mixed Numbers

Date_____ Period____

**Evaluate each expression.**

1) $\frac{5}{4} - \frac{3}{4}$

2) $\frac{3}{2} - \frac{1}{2}$

3) $\frac{2}{5} + \frac{4}{5}$

4) $\frac{1}{3} - \frac{1}{3}$

5) $6 - \frac{1}{6}$

6) $\frac{1}{2} - \frac{1}{2}$

7) $\frac{1}{5} + \frac{1}{5}$

8) $\frac{7}{6} - \frac{5}{6}$

9) $\left(-\frac{4}{5}\right) - \frac{7}{8}$

10) $\frac{1}{3} - \left(-\frac{5}{3}\right)$

11) $\left(-\frac{1}{3}\right) + \frac{3}{8}$

12) $\left(-\frac{10}{7}\right) + \frac{1}{6}$

13) $\frac{9}{5} + \left(-\frac{4}{3}\right)$

14) $2 - \frac{13}{8}$

15) $\frac{9}{5} - \frac{5}{8}$

16) $\left(-\frac{4}{3}\right) - \left(-\frac{3}{2}\right)$

17) $(-1) + \left(-2\frac{2}{5}\right)$

18) $\left(-3\frac{3}{5}\right) - 4\frac{2}{5}$

19) $3\frac{6}{7} + \left(-1\frac{1}{7}\right)$

20) $1\frac{2}{7} + \left(-3\frac{4}{7}\right)$

21) $2\frac{1}{3} + \left(-1\frac{2}{3}\right)$

22) $\left(-1\frac{3}{4}\right) + \left(-3\frac{3}{4}\right)$

23) $\left(-1\frac{7}{8}\right) + \left(-3\frac{1}{2}\right)$

24) $\left(-2\frac{7}{8}\right) + \left(-1\frac{1}{2}\right)$

25) $\left(-2\frac{5}{6}\right) - \left(-1\frac{1}{4}\right)$

26) $\left(-3\frac{5}{8}\right) - 4\frac{2}{5}$

27) $1\frac{2}{5} - \left(-3\frac{3}{4}\right)$

28) $2\frac{4}{5} - \frac{5}{8}$

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Name_____

# Variable and Verbal Expressions

Date_____ Period____

**Write each as an algebraic expression.**

1) the difference of 10 and 5

2) the quotient of 14 and 7

3) u decreased by 17

4) half of 14

5) x increased by 6

6) the product of x and 7

7) the sum of q and 8

8) 6 squared

9) twice q

10) the product of 8 and 12

11) the quotient of 18 and n

12) n cubed

**Write each as a verbal expression.**

13) $\frac{x}{2}$

14) $a + 9$

15) $19 - 3$

16) $5n$

17) $q^2$

18) $\frac{40}{5}$

19) $\frac{a}{8}$

20) $x + 8$

21) $n - 14$

22) $2^2$

23) $\frac{60}{5}$

24) $n \cdot 6$

**Evaluate each expression.**

25) 5 squared

26) the product of 8 and 10

27) 20 decreased by 17

28) the quotient of 96 and 8

29) twice 6

30) 10 less than 17

31) 9 times 5

32) 10 increased by 8

33) 7 squared

34) the product of 4 and 5

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Name_____

# Order of Operations

Date_____ Period____

**Evaluate each expression.**

1) $3(6+7)$

2) $5 \times 3 \times 2$

3) $72 \div 9 + 7$

4) $2 + 7 \times 5$

5) $9 + 8 - 7$

6) $9 - 32 \div 4$

7) $5(10 - 1)$

8) $48 \div (4 + 4)$

9) $20 \div (4 - (10 - 8))$

10) $40 \div 4 - (5 - 3)$

11) $9 + 9 + 6 - 5$

12) $(5 + 16) \div 7 - 2$

13) $7 + 10 \times 5 + 10$

14) $(6 + 25 - 7) \div 6$

15) $(6-4)\times 49\div 7$

16) $(7\times 5)\div 5$

17) $\dfrac{43-1}{4+2}+10$

18) $(8+5)\times\dfrac{35}{5}+6$

19) $\dfrac{27}{2+3+4}+3$

20) $\dfrac{45}{8(5-4)-3}$

21) $8\times\dfrac{15}{5}-(5+9)$

22) $2\times 7-\dfrac{10}{9-4}$

23) $(10+2-2)\times 6-1$

24) $\dfrac{49}{7}\times\dfrac{60}{2\times 5}$

25) $(2+6\times 2+2-4)\times 2$

26) $\dfrac{8}{5-1}\times(3+6)\times 3$

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Name_____

# Combining Like Terms

Date_____ Period____

**Simplify each expression.**

1) $-6k + 7k$

2) $12r - 8 - 12$

3) $n - 10 + 9n - 3$

4) $-4x - 10x$

5) $-r - 10r$

6) $-2x + 11 + 6x$

7) $11r - 12r$

8) $-v + 12v$

9) $-8x - 11x$

10) $4p + 2p$

11) $5n + 11n$

12) $n + 4 - 9 - 5n$

13) $12r + 5 + 3r - 5$

14) $-5 + 9n + 6$

15) $n - 4 - 9$

16) $4n - n$

17) $-3x - 9 + 15x$

18) $-9k + 8k$

19) $-16n - 14n$

20) $15n - 19n$

21) $-4 + 7(1 - 3m)$

22) $-5n + 3(6 + 7n)$

23) $-2n - (9 - 10n)$

24) $10 - 5(9n - 9)$

25) $9a + 10(6a - 1)$

26) $-9(6m - 3) + 6(1 + 4m)$

27) $-10(1 - 9x) + 6(x - 10)$

28) $5(-2n + 4) + 2(n + 3)$

29) $-3(10b + 10) + 5(b + 2)$

30) $-7(n + 3) - 8(1 + 8n)$

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Name_____

# Multi-Step Equations

Date_____ Period____

**Solve each equation.**

1) $-20 = -4x - 6x$

2) $6 = 1 - 2n + 5$

3) $8x - 2 = -9 + 7x$

4) $a + 5 = -5a + 5$

5) $4m - 4 = 4m$

6) $p - 1 = 5p + 3p - 8$

7) $5p - 14 = 8p + 4$

8) $p - 4 = -9 + p$

9) $-8 = -(x + 4)$

10) $12 = -4(-6x - 3)$

11) $14 = -(p - 8)$

12) $-(7 - 4x) = 9$

13) $-18 - 6k = 6(1 + 3k)$

14) $5n + 34 = -2(1 - 7n)$

15) $2(4x - 3) - 8 = 4 + 2x$

16) $3n - 5 = -8(6 + 5n)$

17) $-(1 + 7x) - 6(-7 - x) = 36$

18) $-3(4x + 3) + 4(6x + 1) = 43$

19) $24a - 22 = -4(1 - 6a)$

20) $-5(1 - 5x) + 5(-8x - 2) = -4x - 8x$

Name_____

# Two-Step Equation Word Problems

Date_____ Period____

1) 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?

2) Aliyah had $24 to spend on seven pencils. After buying them she had $10. How much did each pencil cost?

3) The sum of three consecutive numbers is 72. What are the smallest of these numbers?

4) The sum of three consecutive even numbers is 48. What are the smallest of these numbers?

5) You bought a magazine for $5 and four erasers. You spent a total of $25. How much did each eraser cost?

6) Maria bought seven boxes. A week later half of all her boxes were destroyed in a fire. There are now only 22 boxes left. With how many did she start?

7) Sumalee won 40 super bouncy balls playing horseshoes at her school's game night. Later, she gave two to each of her friends. She only has 8 remaining. How many friends does she have?

8) Imani spent half of her weekly allowance playing mini-golf. To earn more money her parents let her wash the car for $4. What is her weekly allowance if she ended with $12?

9) Aliyah had some candy to give to her four children. She first took ten pieces for herself and then evenly divided the rest among her children. Each child received two pieces. With how many pieces did she start?

10) How old am I if 400 reduced by 2 times my age is 244?

11) Jill sold half of her comic books and then bought sixteen more. She now has 36. With how many did she begin?

12) For a field trip 4 students rode in cars and the rest filled nine buses. How many students were in each bus if 472 students were on the trip?

13) On Tuesday Shanice bought five hats. On Wednesday half of all the hats that she had were destroyed. On Thursday there were only 17 left. How many did she have on Monday?

14) The Cooking Club made some pies to sell at a basketball game to raise money for the new math books. The cafeteria contributed four pies to the sale. Each pie was then cut into five pieces and sold. There were a total of 60 pieces to sell. How many pies did the club make?