

8th Enriched Going Into Algebra A or R

When starting class next year, you should have a concrete understanding of the topics listed below. We will cover Slope* in the first units next year.

In order to help you with this, we are attaching a packet of practice that you should complete over the summer. There are problems for each of these skills and a solutions sheet at the back so you can check your solutions. All work should be completed on a separate sheet of paper and brought with you on the first day of school. Khan Academy is a great resource for videos, practice, and quizzes to help you master these. IXL also has practice that you can complete. Simply search the topic you are working on.

We hope you have a great summer and good luck in high school!

- Order of Operations
 - with positive & negative integers, fractions, and decimals
- Rounding to a Given Place Value
- Evaluating Functions
- Fractions
 - simplifying fractions
 - finding the least common denominator
 - changing mixed numbers to improper fractions/improper fractions to mixed numbers
 - converting between fractions and decimals
- Operations with Rational Numbers
 - all operations with combinations of fractions and integers
- Plotting Points on a Coordinate Plane
- Solving Multi-Step Equations with Variables on Both Sides, including:
 - equations with fractions
 - equations with decimals
 - equations with special solutions
- Finding Slope of a Line Given:*
 - A graph
 - 2 points
 - An equation

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Evaluate each expression.

1) $2 - (-7)$

2) $3 + (-3)$

3) $(-5) - (-5)$

4) $3 - (-4) - (-2)$

5) $5 - (-5) - 4$

6) $(-5) - 6 - (-6)$

7) $(-1) - 8 - (-5) + (-5)$

8) $(-7) - (-2) - (-7) + 8$

9) $6 + (-1) + (-3) - (-8)$

10) $\frac{1}{5} + \left(-\frac{9}{5}\right)$

11) $\left(-1\frac{5}{8}\right) + \frac{5}{4}$

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

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

14) $\left(-1\frac{3}{5}\right) + \frac{3}{2} + \left(-\frac{1}{2}\right)$

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

16) $1.5 - 2.68$

17) $(-2.5) + (-3.8)$

18) $(-4.5) + 2.3$

19) $(-7.7) + (-3.7) + 3.4$

20) $0.5 + (-0.2) + 4.2$

21) $8 + (-1.1) + 5$

22) $(-6.4) - 6.7 + 4.2 - 4.91$

23) $(-5.7) + (-8) - (-0.6) - (-3.5)$

24) $(-7.2) - (-3.1) + (-4.1) - (-7.2)$

Find each quotient.

25) $\frac{-10}{5}$

26) $\frac{27}{-9}$

27) $\frac{-100}{-10}$

28) $\frac{4\frac{4}{9}}{\frac{1}{3}}$

$$29) \frac{4\frac{1}{2}}{-\frac{1}{2}}$$

$$30) \frac{-\frac{1}{8}}{\frac{1}{10}}$$

$$31) \frac{-3\frac{5}{8}}{-8}$$

$$32) \frac{-2}{-\frac{15}{8}}$$

$$33) \frac{\frac{2}{5}}{-10}$$

$$34) \frac{-3.4}{0.5}$$

$$35) \frac{8.1}{5.4}$$

$$36) \frac{2.4}{-3}$$

Find each product.

$$37) (-7)(4)$$

$$38) (-3)(-9)$$

$$39) (3)(-8)$$

$$40) \left(\frac{4}{3}\right)\left(-\frac{13}{10}\right)$$

41) $\left(\frac{7}{8}\right)\left(-\frac{4}{3}\right)$

42) $\left(8\frac{2}{5}\right)\left(-\frac{9}{8}\right)$

43) $(-8)\left(-\frac{8}{7}\right)$

44) $(-5)\left(-\frac{7}{6}\right)$

45) $(-3)\left(-\frac{6}{5}\right)$

46) $(-5.3)(1.1)$

47) $(-8.8)(0.33)$

48) $(-3.6)(2.873)$

Solve each equation.

49) $-2n + n = -6$

50) $-20 = 6x - x$

51) $5a + 4a = 18$

52) $108 = 4 + 8(x + 5)$

53) $228 = -4(8k + 7)$

54) $-8(5x + 2) = 304$

$$55) 77 = 7(-3 + 4v) + 7(6 - 8v)$$

$$56) 58 = 2(2 - 3v) + 3(-3v + 8)$$

$$57) -4(3k + 3) - 8(6k - 4) = 20$$

$$58) \frac{1}{5}x + \frac{6}{5}x = -\frac{91}{30}$$

$$59) \frac{2}{5}x + \frac{4}{5}x = \frac{18}{25}$$

$$60) -11 = -\frac{11}{3}x - 2 - \frac{5}{3}$$

$$61) 2r + r = -3r + 3r - 12$$

$$62) n + 4n = 4n - 5$$

$$63) -6n = -n - 5n$$

$$64) -18 - 6b = 6(3 - 3b)$$

$$65) 8 + p = 2(-4p - 5)$$

$$66) -2(-6r + 2) = 28 + 4r$$

$$67) 2(p - 2) - 4(1 + 2p) = 3p + 2 - 4p$$

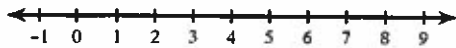
$$68) -2(-5k + 4) - 6(3k + 3) = -8k - 5$$

$$69) 3(1 + 4n) + 3 = 3(3n - 6)$$

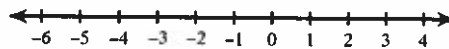
$$70) 6(6.5x + 7) = -231$$

Solve each inequality and graph its solution.

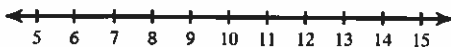
71) $3(6p - 1) \geq 123$



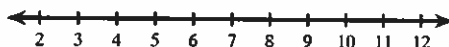
72) $-90 < -6(-3p + 3)$



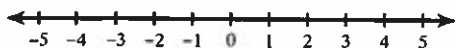
73) $-2(1 + 8k) + 2k < -100$



74) $6x + 2(5x + 1) > 130$



75) $84 < 7(4 + 8x)$



Solve each proportion.

76) $\frac{n}{48} = \frac{15}{6}$

77) $\frac{10}{x} = \frac{34}{28}$

78) $\frac{30}{5} = \frac{k}{41}$

79) $\frac{8}{17} = \frac{38}{m}$

$$80) \frac{6}{v} = \frac{16}{24}$$

$$81) \frac{13}{31} = \frac{k-48}{37}$$

$$82) \frac{28}{33} = \frac{23}{n-26}$$

$$83) \frac{31}{22} = \frac{26}{n-21}$$

$$84) \frac{n-36}{6} = \frac{32}{40}$$

$$85) \frac{x+9}{43} = \frac{14}{25}$$

$$86) \frac{43}{x} = \frac{3}{x+50}$$

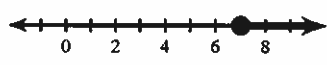
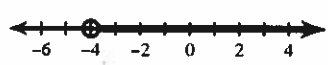
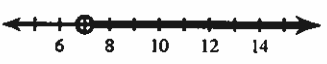
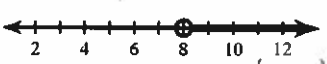
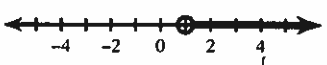
$$87) \frac{k-20}{26} = \frac{5k}{50}$$

$$88) \frac{n}{n-45} = \frac{4}{19}$$

$$89) \frac{2}{29} = \frac{x-20}{x}$$

$$90) \frac{a}{26} = \frac{a-33}{3}$$

Answers to 8th Enriched Going Into Algebra A or R

- | | | | |
|--|---|----------------------------------|----------------------|
| 1) 9 | 2) 0 | 3) 0 | 4) 9 |
| 5) 6 | 6) -5 | 7) -9 | 8) 10 |
| 9) 10 | 10) $-\frac{8}{5}$ | 11) $-\frac{3}{8}$ | 12) $\frac{17}{24}$ |
| 13) $-\frac{211}{56}$ | 14) $-\frac{3}{5}$ | 15) $-\frac{87}{20}$ | 16) -1.18 |
| 17) -6.3 | 18) -2.2 | 19) -8 | 20) 4.5 |
| 21) 11.9 | 22) -13.81 | 23) -9.6 | 24) -1 |
| 25) -2 | 26) -3 | 27) 10 | 28) $\frac{40}{3}$ |
| 29) -9 | 30) $-\frac{5}{4}$ | 31) $\frac{29}{64}$ | 32) $\frac{16}{15}$ |
| 33) $-\frac{1}{25}$ | 34) -6.8 | 35) 1.5 | 36) -0.8 |
| 37) -28 | 38) 27 | 39) -24 | 40) $-\frac{26}{15}$ |
| 41) $-\frac{7}{6}$ | 42) $-\frac{189}{20}$ | 43) $\frac{64}{7}$ | 44) $\frac{35}{6}$ |
| 45) $\frac{18}{5}$ | 46) -5.83 | 47) -2.904 | 48) -10.3428 |
| 49) {6} | 50) {-4} | 51) {2} | 52) {8} |
| 53) {-8} | 54) {-8} | 55) {-2} | 56) {-2} |
| 57) {0} | 58) $\left\{-\frac{13}{6}\right\}$ | 59) $\left\{\frac{3}{5}\right\}$ | 60) {2} |
| 61) {-4} | 62) {-5} | 63) { All real numbers. } | |
| 64) {3} | 65) {-2} | 66) {4} | 67) {-2} |
| 68) No solution. | 69) {-8} | 70) {-7} | |
| 71) $p \geq 7$:  | 72) $p > -4$:  | | |
| 73) $k > 7$:  | 74) $x > 8$:  | | |
| 75) $x > 1$:  | 76) {120} | 77) {8.24} | |
| 78) {246} | 79) {80.75} | 80) {9} | 81) {63.52} |
| 82) {53.11} | 83) {39.45} | 84) {40.8} | 85) {15.08} |
| 86) {-53.75} | 87) {-12.5} | 88) {-12} | 89) {21.48} |
| 90) {37.3} | | | |