

7th Enriched Going Into 8th Algebra/ITF

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 can't wait to have you in class next year!

- Order of Operations
 - with positive & negative integers, fractions, and decimals
- Rounding to a Given Place Value
- Solving Multi-Step Equations with Variables on Both Sides, including:
 - equations with fractions
 - equations with decimals
 - equations with special solutions
- Solving Literal Equations (solving equations for a given variable)
- Solving Proportions
 - Unit Rate problems
- Solving & Graphing Multi-Step Inequalities with Variables on Both Sides including:
 - inequalities with fractions
 - inequalities with decimals
 - compound inequalities
 - inequalities with special solutions
- Plotting Points on a Coordinate Plane
- Finding Slope of a Line Given:*
 - A graph
 - 2 points
 - An equation

7th Enriched Going Into 8th ITF and Algebra 1

7th into 8th _____

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

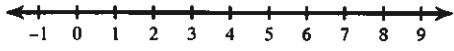
$$68) -2(-5k + 4) - 6(3k + 3) = -8k - 5$$

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

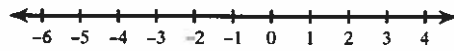
$$70) 6(6.5x + 7) = -231$$

Solve each inequality and graph its solution.

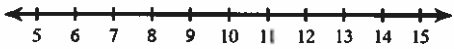
71) $3(6p - 1) \geq 123$



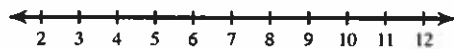
72) $-90 < -6(-3p + 3)$



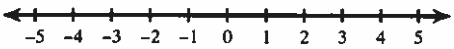
73) $-2(1 + 8k) + 2k < -100$



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

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

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

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

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

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

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

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

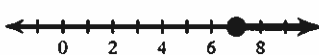
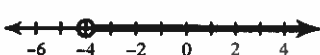
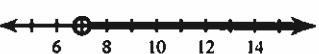
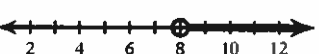
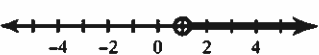
$$87) \frac{k-20}{26} = \frac{5k}{50}$$

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

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

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

Answers to 7th Enriched Going Into 8th ITF and Algebra 1

- | | | | |
|--|---|----------------------------------|----------------------|
| 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} | | | |