

## 7<sup>th</sup> Academic Going Into 8<sup>th</sup> Enriched

When starting class next year, you should have a concrete understanding of the topics listed below.

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
- 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 One Side, including:
  - including distributing & combining like terms
  - equations with fractions
- Solving Proportions
  - Unit Rate problems
- Solving & Graphing Multi-Step Inequalities with Variables on One Side including:
  - including distributing & combining like terms
  - inequalities with fractions

Write each as a decimal. Use repeating decimals when necessary.

1)  $\frac{37}{100}$

2)  $\frac{1}{125}$

3)  $\frac{26}{125}$

4)  $\frac{21}{25}$

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

6)  $\frac{7}{10}$

Write each as a fraction.

7) 0.28

8) 0.065

9) 0.788

10) 0.72

Evaluate each expression.

11)  $(-8) - (-2)$

12)  $1 - 8$

13)  $(-6) + 7$

14)  $(-3.7) - 7.2$

15)  $(-5.1) - 7.5$

16)  $(-2.7) + 5.7$

17)  $(-3.7) + (-1.18)$

18)  $4.7 - (-4.2)$

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

20)  $\left(-\frac{5}{8}\right) + \left(-\frac{1}{6}\right)$

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

22)  $\left(-2\frac{4}{7}\right) - \frac{3}{7}$

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

24)  $\frac{5}{4} - \frac{7}{8}$

25)  $\left(-\frac{11}{8}\right) - \left(-\frac{9}{5}\right)$

**Find each product.**

26)  $-8.075 \times 9.61$

27)  $-7.1 \times 5.6$

28)  $-9.9 \times -6.2$

29)  $-3\frac{2}{7} \times -\frac{1}{9}$

30)  $-3\frac{3}{10} \times 2\frac{5}{8}$

31)  $4\frac{4}{5} \times -3\frac{2}{3}$

$$32) -2\frac{5}{6} \times \frac{7}{10}$$

$$33) 1\frac{1}{4} \times -3\frac{1}{3}$$

$$34) -1\frac{2}{5} \times 4\frac{6}{7}$$

$$35) -\frac{9}{10} \times \frac{2}{7}$$

$$36) 7 \times -\frac{1}{5}$$

$$37) -\frac{7}{4} \times \frac{2}{3}$$

**Find each quotient.**

$$38) -5.7 \div 1.6$$

$$39) 6.29 \div 3.7$$

$$40) -6.8 \div 8$$

$$41) -7 \div 1.6$$

$$42) 5\frac{1}{8} \div \frac{3}{8}$$

$$43) -3\frac{1}{3} \div 2\frac{3}{5}$$

$$44) 3\frac{7}{9} \div \frac{7}{5}$$

$$45) 1\frac{2}{9} \div 3\frac{3}{4}$$

$$46) 3\frac{1}{5} \div 3\frac{3}{7}$$

$$47) \frac{-1}{2} \div \frac{1}{4}$$

**Evaluate each expression.**

48)  $(4 - 2)^2$

49)  $(5 + 3 + 5 - 5) \times 4$

50)  $2 + 3 - 18 \div (2 + 4)$

51)  $(2 + 1 + 5 + 4) \div 2$

52)  $5(5 + 8 \div 4)$

53)  $5 - 1 + 4 - 2 - (5 - 5)$

54)  $(8 \div 2 - 3) \times 6 \times 6 - 1$

55)  $16 \div 4 - (4 - 1 - 18 \div 6)$

**Evaluate each using the values given.**

56)  $4 + q(p + r)$ ; use  $p = 4$ ,  $q = 3$ , and  $r = 6$

57)  $m \times n^2 \div 3$ ; use  $m = 5$ , and  $n = 3$

58)  $y + y(x - x \div 3)$ ; use  $x = 3$ , and  $y = 6$

59)  $(x + y) \div 6 + x - y$ ; use  $x = 4$ , and  $y = 2$

60)  $p(6 - 2 \div 2)(p + q)$ ; use  $p = 2$ , and  $q = 2$

61)  $m^2 + m - (6 - n)^2$ ; use  $m = 6$ , and  $n = 5$

**Solve each equation.**

$$62) 64 = 4x - 4$$

$$63) -5n + 1 = -4$$

$$64) 2 = \frac{v}{12} + 1$$

$$65) 6 = \frac{x}{3} + 3$$

$$66) 1\frac{5}{9} = -9 - 9\frac{1}{2}b$$

$$67) -9 + \frac{3}{7}n = -8\frac{4}{7}$$

$$68) 4.1 - 5.5b = -68.5$$

$$69) -2.6n + 9.18 = 34.66$$

$$70) 4.564 = \frac{10 + n}{6.2}$$

$$71) 2 - 5(4n + 7) = -173$$

$$72) -6 - 8(-6v - 4) = -262$$

$$73) 134 = -4b - 6(5b + 6)$$

$$74) -5(-6 + 4x) = 90$$

$$75) -7k - 4(2k + 2) = 112$$

**Simplify each. Write your answer as a mixed number when possible.**

$$76) 9\frac{40}{60}$$

$$77) 2\frac{18}{72}$$

$$78) 5\frac{20}{40}$$

$$79) 5\frac{18}{27}$$

$$80) 6\frac{18}{36}$$

**Simplify each. Write your answer as improper fraction.**

$$81) 3\frac{8}{12}$$

$$82) 8\frac{6}{18}$$

$$83) 8\frac{6}{24}$$

$$84) 5\frac{18}{30}$$

$$85) 7\frac{27}{45}$$

## Answers to 8th Enriched

- |                                   |                                    |                                   |                                   |
|-----------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| 1) $0.\overline{37}$              | 2) 0.008                           | 3) 0.208                          | 4) 0.84                           |
| 5) $0.\overline{3}$               | 6) 0.7                             | 7) $\frac{7}{25}$                 | 8) $\frac{13}{200}$               |
| 9) $\frac{197}{250}$              | 10) $\frac{18}{25}$                | 11) -6                            | 12) -7                            |
| 13) 1                             | 14) -10.9                          | 15) -12.6                         | 16) 3                             |
| 17) -4.88                         | 18) 8.9                            | 19) $2\frac{1}{10}$               | 20) $-\frac{19}{24}$              |
| 21) $-3\frac{1}{8}$               | 22) -3                             | 23) $\frac{37}{14}$               | 24) $\frac{3}{8}$                 |
| 25) $\frac{17}{40}$               | 26) -77.60075                      | 27) -39.76                        | 28) 61.38                         |
| 29) $\frac{23}{63}$               | 30) $-8\frac{53}{80}$              | 31) $-17\frac{3}{5}$              | 32) $-1\frac{59}{60}$             |
| 33) $-4\frac{1}{6}$               | 34) $-6\frac{4}{5}$                | 35) $-\frac{9}{35}$               | 36) $-\frac{7}{5}$                |
| 37) $-\frac{7}{6}$                | 38) -3.5625                        | 39) 1.7                           | 40) -0.85                         |
| 41) -4.375                        | 42) $13\frac{2}{3}$                | 43) $-1\frac{11}{39}$             | 44) $2\frac{44}{63}$              |
| 45) $\frac{44}{135}$              | 46) $\frac{14}{15}$                | 47) -2                            | 48) 4                             |
| 49) 32                            | 50) 2                              | 51) 6                             | 52) 35                            |
| 53) 6                             | 54) 35                             | 55) 4                             | 56) 34                            |
| 57) 15                            | 58) 18                             | 59) 3                             | 60) 40                            |
| 61) 41                            | 62) {17}                           | 63) {1}                           | 64) {12}                          |
| 65) {9}                           | 66) $\left\{-1\frac{1}{9}\right\}$ | 67) {1}                           | 68) {13.2}                        |
| 69) {-9.8}                        | 70) {18.2968}                      | 71) {7}                           | 72) {-6}                          |
| 73) {-5}                          | 74) {-3}                           | 75) {-8}                          | 76) $9\frac{2}{3} = \frac{29}{3}$ |
| 77) $2\frac{1}{4} = \frac{9}{4}$  | 78) $5\frac{1}{2} = \frac{11}{2}$  | 79) $5\frac{2}{3} = \frac{17}{3}$ | 80) $6\frac{1}{2} = \frac{13}{2}$ |
| 81) $3\frac{2}{3} = \frac{11}{3}$ | 82) $8\frac{1}{3} = \frac{25}{3}$  | 83) $8\frac{1}{4} = \frac{33}{4}$ | 84) $5\frac{3}{5} = \frac{28}{5}$ |
| 85) $7\frac{3}{5} = \frac{38}{5}$ |                                    |                                   |                                   |