

Dear Parents and Guardians,

Included is a math skills transition package to help reinforce key skills and preparation for success in Math. The following transition package was thoughtfully developed by grade 8 and grade 9 math teachers who focused on the needs of the students.

Please have your son/daughter practice these skills over the next few months in preparation for Grade 9 Math.

The package consists of three resources:

1. Check for understanding questions organized by topic
2. Solutions to the check for understanding
3. Online Links to extra practice organized by topic

Below you will find a list of additional resources for extra support.

Additional Resources:

- [IXL](#) - *A username and password will be provided prior to July 2018
- [Khan Academy](#) - includes video and practice questions
- [Edugains.ca](#) - gap closing materials
- [Math-drills.com](#) - extra worksheets and practice questions
- [Math Antics](#) - educational videos and practice questions
- [Math-Aids](#) - extra worksheets and practice questions (search by topic)

Thank you for your support.

Grade 8 and 9 Transition Team

High School Math Prep

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- A.9 Understand when to use different operations

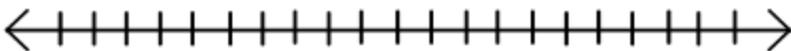
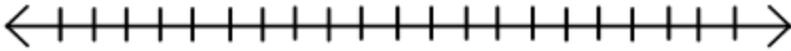
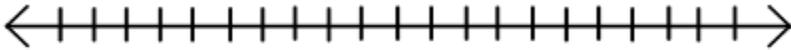
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High School Math Prep QUESTIONS

Strand
A. Number Sense
Key Ideas
A.1 Rounding Decimals and Place Value A.2 Decimals on a number line A.3 Finding Factors A.4 Place numbers on a number line A.5 Operations with Integers: Adding and Subtracting A.6 Operations with Integers: Multiplying and Dividing A.7 Order of Operations A.8 Order of Operations with Measurement A.9 Understand when to use different operations
Check for Understanding
A.1 Rounding Decimals and Place Value a) Round 1.965 to the nearest tenth. b) What is $9\frac{5}{12}$ rounded to the nearest whole number? c) What is $19\frac{5}{7}$ rounded to the nearest whole number? d) What digit is in the tens place of 34.285? A.2 Decimals on a number line Use a number line to compare 11.5 and 11.7  Show 11.47 on a number line. Round to the nearest tenth.  Plot the following numbers on a number line. i) 1.3 ii) 1.67 iii) 2.04 

High School Math Prep QUESTIONS

A.3 Finding Factors

a) Create a factor tree for each number and express each as an exponent.

i) 64

ii) 18

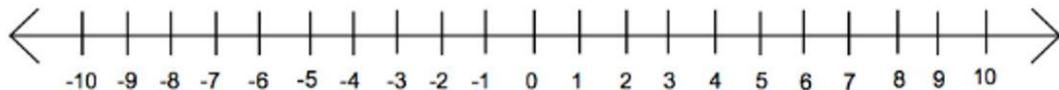
b) Create a factor rainbow for the following numbers.

i) 24

ii) 96

A.4 Place numbers on a number line

a)



Represent the set of numbers on the number line:

-7	4.4	-2.8	$3\frac{1}{4}$	$-\frac{14}{3}$	$\frac{-1}{5}$
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A.5 Operations with Integers: Adding and Subtracting

a) $8 + (-11) =$

b) $-4 + 12 =$

c) $-17 + (-6) =$

d) $6 - (-8) =$

e) $-10 - 14 =$

f) $-16 - (-12) =$

g) $(-7) + 9 + (-4) + 6 =$

h) $15 + (-11) + 9 - (-5) =$

A.6 Operations with Integers: Multiplying and Dividing

a) $-6 \times 8 =$

b) $-11 \times -4 =$

c) $-12 \times 3 =$

d) $-12 \div 4 =$

e) $-20 \div -5 =$

f) $21 \div -7 =$

g) $-72 \div 9 =$

h) $-144 \div -12 =$

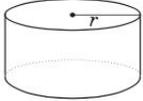
High School Math Prep QUESTIONS

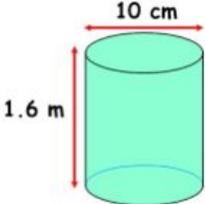
A.7 Order of Operations

- $10 \times (6 + 3) \div 2 =$
- $4 \times 6 \div (10 + 2) =$
- $8^2 + (13 - 4) \times 3 =$
- $(12 + 21 - 3) - 10 + 2^2 =$
- $10 \times (13 \times 6 - 8^2) - 4 =$

A.8 Order of Operations with Measurement

- For the following cylinder, calculate the surface area and volume. The formulas for surface area and volume have been provided in the table below.

<p>Cylinder</p> 	$A_{\text{base}} = \pi r^2$ $A_{\text{lateral surface}} = 2\pi r h$ $A_{\text{total}} = 2A_{\text{base}} + A_{\text{lateral surface}}$ $= 2\pi r^2 + 2\pi r h$	$V = (A_{\text{base}})(\text{height})$ $V = \pi r^2 h$
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A.9 Understand when to use different operations

What numbers, operations and keys would you press on a calculator to solve the following problems? (You do not have to figure out the unknown quantity).

- Last month, you sent 423 text messages. This month you have sent 217 texts while your friend has sent 392. How many texts have you and your friend sent this month?
- Jill has volunteered for 14 hours of community service while her friend Tanya has 70 hours, even though only 40 hours are required for a high school diploma. How many times as many hours does Tanya have as compared to Jill?
- A picture is 60 cm high and 95 cm wide. If it is reduced to 80% of its original height, what will its height be?
- There are 63 students going on a school trip. 48 students can fit on one school bus. The remaining students will take taxis. How many students will be taking taxis?

High School Math Prep QUESTIONS

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B. Graphing, Proportions and Algebra

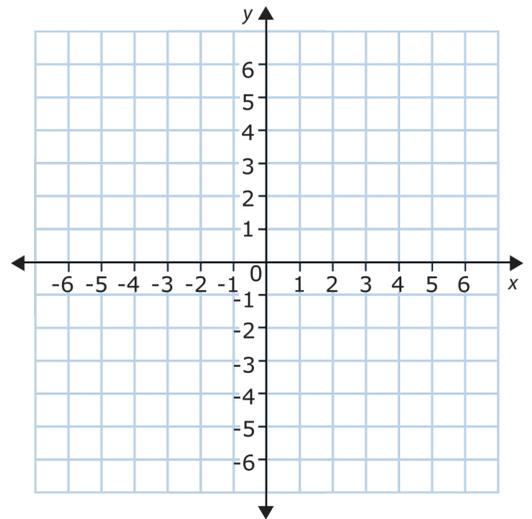
Key Ideas

- B.1 Plotting points on a Cartesian Grid
- B.2 Solve problems involving proportions
- B.3 Solving Equations

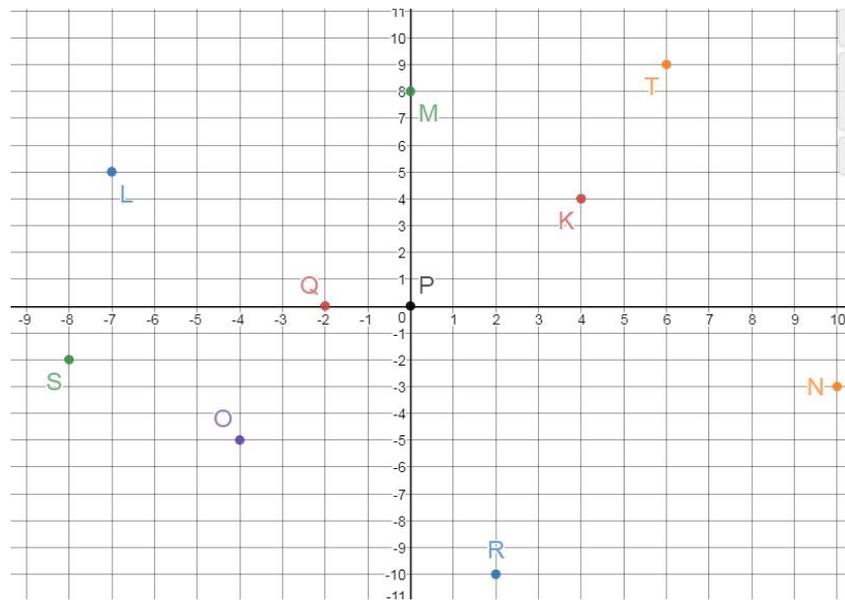
Check for Understanding

B.1 Plotting points on a Cartesian Grid

- a) Plot the following points on the Cartesian grid below
- A(-1,5) B(-3,-4) C(4,6) D(0,-3) E(5,0)
F(3,-1) G(0,0) H(-6,2) I(2,1) J(-2,0)



- b) Determine the coordinates of each point.



High School Math Prep QUESTIONS

B.2 Solve problems involving proportions

a) A recipe for making 15 sugar cookies requires the following ingredients:

2.5 tsp of sugar

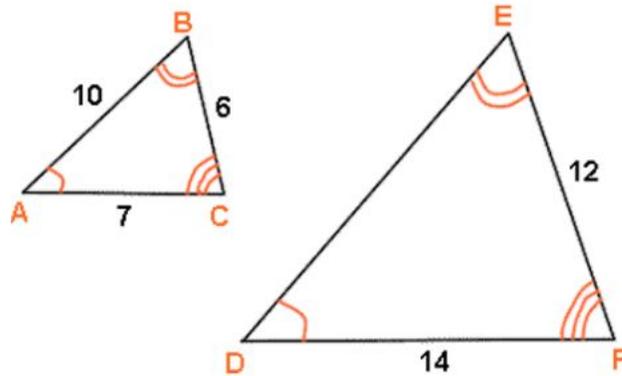
1.3 cups of milk

2.4 cups of flour

If we want to make 35 cookies, how much of each ingredient would we need?

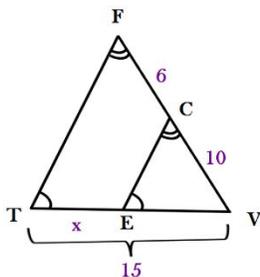
b) The ratio of stone to sand in concrete is 2 to 3. How much stone is needed if 15 bags of sand are used?

c) What is the value of side DE?



High School Math Prep QUESTIONS

d) Determine the value of x in the diagram below.



B.3 Solving Equations

a) Solve the following equations using guess and check:

i) $-4 + x = 10$

ii) $x - 8 = -3$

iii) $3x = 27$

iv) $\frac{x}{7} = 5$

b) Solve the following equations using the balance method:

i) $x - 38 = 75$

ii) $40 + x = -50$

iii) $-13x = 65$

iv) $\frac{x}{16} = 7$

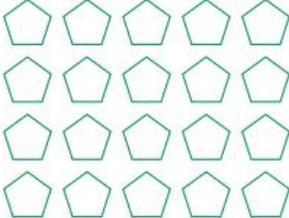
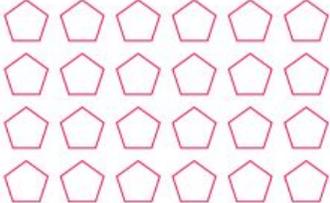
v) $2x + 3 = 15$

vi) $-4 + 5x = 16$

vii) $\frac{x}{3} - 1 = 5$

viii) $43 = 3 + 5x$

High School Math Prep QUESTIONS

Strand																
C. Fractions																
Key Ideas																
C.1 Representing numbers in different ways C.2 Multiplying fractions by a whole number C.3 Adding/subtracting fractions C.4 Multiplying/dividing fractions C.5 Comparing fractions C.6 Mixed and improper fractions C.7 Equivalent fractions																
Check for Understanding																
C.1 Representing numbers in different ways a) Represent the following fractions <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\frac{1}{4}$  </div> <div style="text-align: center;"> $\frac{2}{3}$  </div> </div> b) Understanding the different forms of a number Fill in the table below <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="padding: 5px;">Fraction</th> <th style="padding: 5px;">Decimal</th> <th style="padding: 5px;">Percent (%)</th> <th style="padding: 5px;">Ratio</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">$\frac{1}{9}$</td> <td></td> <td></td> <td style="text-align: center; padding: 5px;">1 : 9</td> </tr> <tr> <td style="text-align: center; padding: 5px;">—</td> <td style="text-align: center; padding: 5px;">0.444̄</td> <td style="text-align: center; padding: 5px;">44.4̄</td> <td></td> </tr> <tr> <td style="text-align: center; padding: 5px;">$\frac{1}{8}$</td> <td style="text-align: center; padding: 5px;">0.125</td> <td></td> <td></td> </tr> </tbody> </table>	Fraction	Decimal	Percent (%)	Ratio	$\frac{1}{9}$			1 : 9	—	0.444̄	44.4̄		$\frac{1}{8}$	0.125		
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$\frac{1}{9}$			1 : 9													
—	0.444̄	44.4̄														
$\frac{1}{8}$	0.125															

High School Math Prep QUESTIONS

C.2 Multiplying fractions by a whole number

a) Multiplying fractions by a whole number

$$12 \times \frac{4}{3}$$

$$\frac{13}{7} \times 5$$

C.3 Adding/subtracting fractions

a) Evaluation the following:

$$\frac{11}{12} + \frac{1}{12}$$

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

$$\frac{23}{2} + \frac{9}{4}$$

C.4 Multiplying/dividing fractions

a) Evaluation the following

$$\frac{1}{2} \times \frac{5}{4}$$

$$\frac{1}{6} \div \frac{8}{11}$$

$$3\frac{2}{7} \div 1\frac{1}{4}$$

C.5 Comparing fractions

a) Compare each pair of fractions using a <, >, or =

$$\frac{4}{9} \square \frac{3}{4}$$

$$\frac{1}{3} \square \frac{1}{3}$$

$$\frac{2}{5} \square \frac{2}{3}$$

$$\frac{2}{9} \square \frac{2}{8}$$

High School Math Prep QUESTIONS

C.6 Mixed and improper fractions

a) Convert each mixed fraction to an improper fraction:

$9\frac{1}{9} = \text{---}$

$3\frac{8}{9} = \text{---}$

$8\frac{7}{12} = \text{---}$

$7\frac{7}{9} = \text{---}$

b) Convert each improper fraction to a mixed fraction:

$\frac{32}{9} = \text{---}$

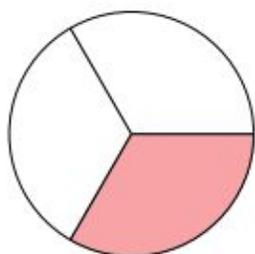
$\frac{67}{12} = \text{---}$

$\frac{116}{15} = \text{---}$

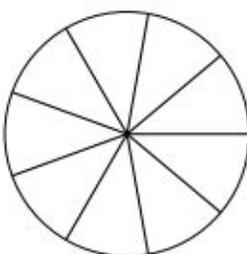
$\frac{34}{15} = \text{---}$

C.7 Equivalent fractions

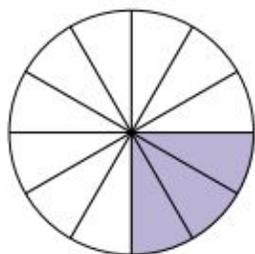
a) Shade the equivalent fraction and write the equivalent fraction:



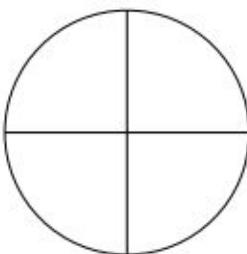
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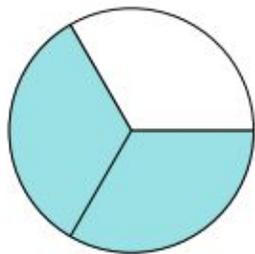
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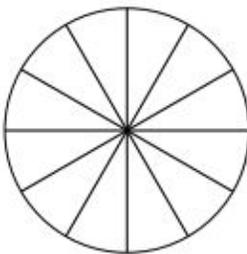
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=



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High School Math Prep QUESTIONS

b) Check mark the equations that show equivalent fractions

$$\frac{5}{11} = \frac{25}{55}$$

$$\frac{5}{5} = \frac{10}{10}$$

$$\frac{6}{9} = \frac{30}{45}$$

$$\frac{8}{12} = \frac{32}{48}$$

$$\frac{6}{11} = \frac{18}{33}$$

$$\frac{3}{4} = \frac{9}{12}$$

$$\frac{5}{9} = \frac{10}{18}$$

$$\frac{6}{6} = \frac{30}{30}$$

c) Find the missing numbers in the equivalent fractions below.

$$\frac{2}{\square} = \frac{8}{20}$$

$$\frac{5}{7} = \frac{15}{\square}$$

$$\frac{\square}{8} = \frac{4}{32}$$

$$\frac{4}{12} = \frac{12}{\square}$$

$$\frac{8}{10} = \frac{32}{\square}$$

$$\frac{3}{10} = \frac{12}{\square}$$

$$\frac{1}{\square} = \frac{2}{18}$$

$$\frac{\square}{4} = \frac{2}{8}$$