

Name:

Teacher:

Grade Nine Math Snapshot

Assessment Summary

Competency / Content	Proficiency Marker		
Number Sense	Emerging	Developing	Proficient
Percentages (1-4)			
Proportional Reasoning (5-6)			
Ordering (7)			
Roots (8-11)			
Determining Perfect Squares (13)			
Computational Fluency			
Adding and Subtracting Fractions (1-3)			
Multiplying Fractions (4-5)			
Dividing Fractions (6)			
Order of Operations (7-8)			
Integers (9-10)			
Solving Equations (11-16)			
Linear Relations & Geometry			
Graphing (1-2)			
Geometry (3-4)			

Grade Nine

This grade nine Math Skills Assessment has been designed as a formative assessment and universal screener for students entering grade nine. The assessment is based on foundational skills from the prior year, and is designed to allow educators to identify the learning needs of students.

The information gained from this tool will serve as a universal screener and will inform individual, small group, and class instruction. It will also help identify patterns of instructional needs in a class as we work to ensure students master these foundational math skills.

Teachers are encouraged to administer the assessment in *small sections* during the first weeks of the semester. A small team of teachers will come together to mark the assessments and heat map the results by class.

This screener is an inventory of skills and does not represent the full, complex set of skills necessary for proficiency in mathematics. It can provide information to inform our Inclusive Education team about planning and support for student success.

Use the column to the right of each question to indicate student understanding using the following marking guide. Scoring of the assessment will not be calculated numerically, but rather will be looked at holistically to help inform instruction:

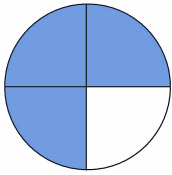
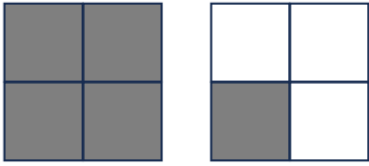
<p><u>Marking Guide</u> ✓ You got it ~ On the right track ● Not yet</p>

Students will also complete a self-reflection following each section of the screener:

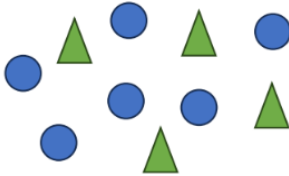
<u>This was (circle one):</u> Easy for me I need some review Difficult

Number Sense

Percentages

1.	<p>What percentage of each diagram is shaded?</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>(a)  ___ %</p> </div> <div style="text-align: center;"> <p>(b)  ___ %</p> </div> </div>	
2.	<p>Fill in the missing value.</p> <p>0.03 = ___ % 0.7 = ___ % 0.005 = ___ %</p> <p>___ = 18% ___ = 13.5% ___ = 0.6 %</p>	
3.	<p>Write 156% as a decimal. _____</p>	
4.	<p>What is 10% of 438? _____</p>	

Proportional Reasoning

5.	<p>What is the ratio of triangles to circles? What is the ratio in lowest terms?</p> <div style="display: flex; align-items: center; justify-content: center; margin: 10px 0;"> <div style="text-align: center; margin-right: 20px;"> <p>___ : ___</p> <p>___ : ___</p> </div> <div style="text-align: center;">  </div> </div>	
6.	<p>Which product is the better deal? Write a sentence including your answer. 2kg of potatoes for \$1.28, or 5kg of potatoes for \$2.99?</p>	

Ordering

7. Order the following from least to greatest: 75% $\frac{5}{10}$ 1.4 $1\frac{1}{4}$ 0.9 1 0.1%

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Roots

8. Find the square root of 25:

$$\sqrt{25} = \underline{\quad}$$

9. Find the square root of 81:

$$\sqrt{81} = \underline{\quad}$$

10. Find the cube root of 8:

$$\sqrt[3]{8} = \underline{\quad}$$

11. Circle which of the following are between 8 and 9:

$$\sqrt{51} \quad \sqrt{55} \quad \sqrt{61} \quad \sqrt{66} \quad \sqrt{71} \quad \sqrt{77} \quad \sqrt{82} \quad \sqrt{88}$$

Perfect Squares

12. Is 120 a perfect square? Explain how you know.

This was (circle one):

Easy for me

I need some review

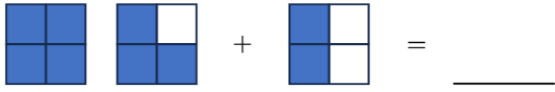
Difficult

Computational Fluency

Operations with Fractions

Adding & Subtracting Fractions

1. Solve the following and simplify:



2. Solve the following:

$$\frac{3}{4} + \frac{1}{2}$$

3. Solve the following:

$$\frac{13}{15} - \frac{3}{5}$$

Multiplying Fractions

4. Solve the following:

$$\frac{1}{5} \times \frac{2}{3}$$

5. Solve the following and simplify:

$$\frac{1}{4} \times 2\frac{2}{3}$$

Dividing Fractions

6. Solve the following:

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

Order of Operations

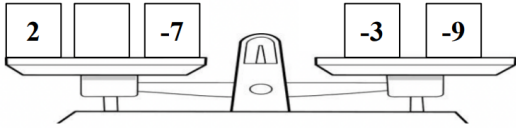
7. Solve the following:

$$\frac{1}{10} + \frac{2}{5} \times \frac{3}{2}$$

8. Solve the following and simplify:

$$\frac{1}{2} \div \frac{3}{2} \times \left(2 - \frac{4}{5}\right) + \frac{1}{5}$$

Operations with Integers

Equations & Expressions		
9.	$(-5) + (6) =$ $(-5) - (6) =$	$(-10) \div (-2) =$ $(-10) \times (-2) =$
10.	Write an expression for this statement: <i>Three times a number minus five.</i>	
11.	Solve the equation for w: $w - 25 = 31$	
12.	Below are a set of numbers on a scale. Choose a number for the blank box that would best balance the scale. <div style="text-align: center; margin-top: 10px;">  </div>	
13.	Solve the following expression for m=4: $4m + 5 - 0.5m + 5$	
14.	Solve the equation for y: $-3y = 63$	
15.	Solve the equation for p: $-16 = -3p + 5$	
16.	Solve for h: $5 + 3h + h = 21$	
17.	Simplify and solve for x: $3x + 5 = 2x - 1$	

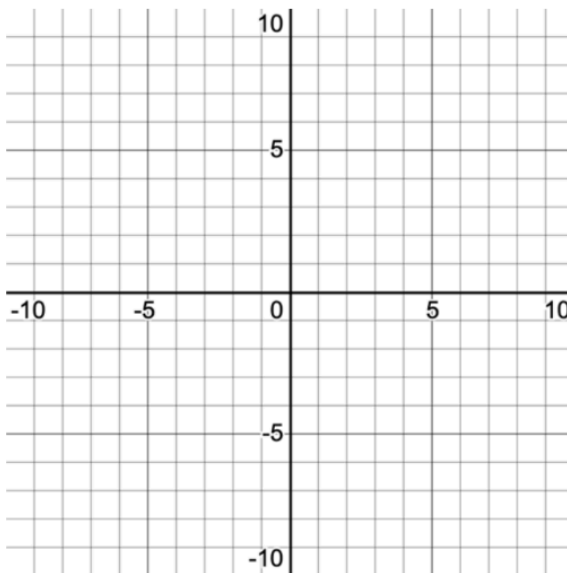
<u>This was (circle one):</u>	Easy for me	I need some review	Difficult
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Linear Relations & Geometry

Graphing

1. Plot the points and make a line graph using the following table of values:

x	y
-6	-5
-3	-2
0	1
3	4
6	7



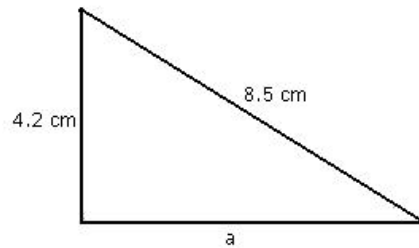
2. Circle the ordered pair that is a solution to the following equation:

$$y = 3x - 21$$

(1, 10) (10, -1) (3, -4) (5, -6)

Geometry

3. Label the sides and right angle in the triangle below:

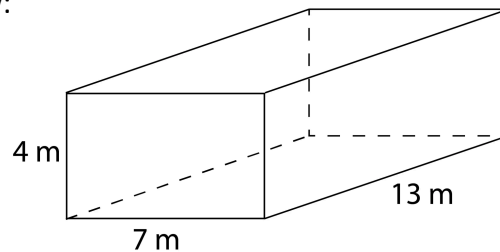


What is the name of the side that measures 8.5cm in the diagram above?

Calculate the missing side length "a." Show all your work. Round your answer to the nearest hundredth.

***Remember $a^2 + b^2 = c^2$

4. Find the volume and surface area of the shape below:



This was (circle one):

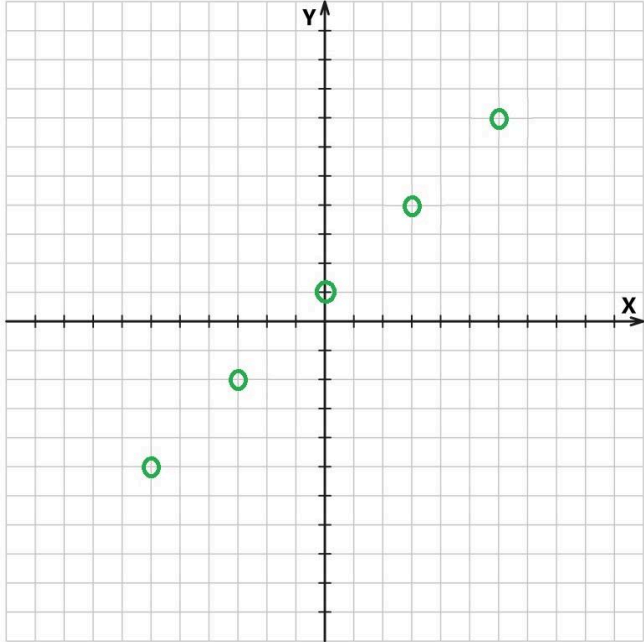
Easy for me

I need some review

Difficult

Answer Key

Number Sense	Answers	
Percentages	1.	75%, 125%
	2.	3%, 70%, 0.5% 0.18, 0.135, 0.006
	3.	1.56
Proportional Reasoning	4.	43.8
	5.	4:6 and 2:3
	6.	The 5kg bag is the better deal (\$0.60/kg vs \$0.64/kg)
Ordering	7.	0.1, 5/10, 75%, 0.9, 1, 1 1/4, 1.4
Roots	8.	5
	9.	9
	10.	2
	11.	$\sqrt{66}$, $\sqrt{71}$, $\sqrt{77}$
Determining Perfect Squares	12.	No. The square root of 120 is 10.9544..., which is not a whole number.
Computational Fluency		
Adding and Subtracting Fractions	1.	9/4 or 2 1/4
	2.	5/4 or 1 1/4
	3.	4/15
Multiplying Fractions	4.	2/15
	5.	2/3
Dividing Fractions	6.	3/14
Order of Operations	7.	7/10
	8.	3/5
Integers	9.	(1) (5) (-11) (20)

Equations & Expressions	10.	$3n - 5$
	11.	$w = 56$
	12.	-7
	13.	$m = 24$
	14.	$y = 21$
	15.	$p = 7$
	16.	$h = 4$
	17.	$X = -6$
Linear Relations & Geometry		Answers
Linear Relations	1.	
	2.	$(5, -6)$
Geometry	3.	Hypotenuse $a = 7.39\text{cm}$
	4.	Volume = 364 m^3 Surface Area = 342 m^2