

Name: KEY

Teacher: _____

Block: _____

Math 8 Midyear PRACTICE Exam 2018

You are being assessed with Criteria A: Knowledge and Understanding & Criteria C: Communication
You may use your calculator for the following questions.

Section A – knowledge and recall, solving simple familiar problems.

If you answer most of the questions in this section correctly you will achieve level 4 on Criterion A

NON Calculator Section:

1. a) $-6 + -7$
 $= -13$

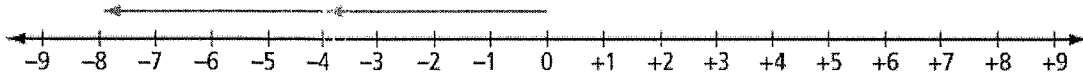
b) -7×2
 $= -14$

c) $3 - -4$
 $= +7$

d) $-10 \div -5$
 $= +2$

Calculator:

2. Which expression does this diagram represent?



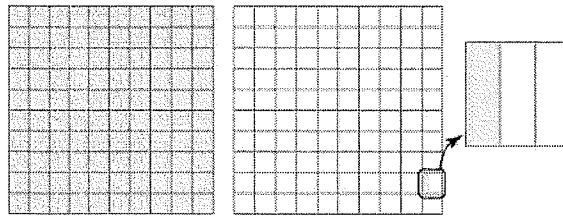
a. $2 \times (-4) = 8$

b. $2 \times (-4) = -8$

c. $-2 \times (-4) = 8$

d. $-2 \times (+4) = -8$

3. One completely shaded grid represents 100%. What percent does this diagram represent?



a. $\frac{1}{3}\%$

b. $99\frac{1}{3}\%$

c. $100\frac{1}{3}\%$

d. $101\frac{1}{3}\%$

4. Solve for x in the equation $3x - 9 = 3$

a. 4

b. 3

c. -3

d. 12

5. Determine the lowest common denominator for the following group of fractions: $\frac{1}{3}$, $\frac{4}{5}$, and $\frac{3}{8}$.

a. 60

b. 80

c. 120

d. 140

6. Calculate $12 \div \frac{3}{4}$.

a. $\frac{1}{16}$

b. $\frac{1}{9}$

c. 9

d. 16

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

7. Identify each of the following as a ratio, a rate or a unit rate

- Ratio a. 12 marks out of a total of 20 marks b. 25 cars sold in 5 days *rate*
 c. 25 L of gas used to travel 390 km d. 8 m per min *unit rate*

RATE

8. True or False: A part-to-whole ratio can be written as a fraction, a decimal, and a percent

9. What is the equivalent ratio to 2:4

- a. 1:2 b. 2:8 c. 2:1 d. 4:2

10. How would you write 15 green crayons to 10 red crayons in ratio notation?

15:10 or 3:2

11. The temperature increased from 4 °C to 12 °C in four hours. Determine the average hourly temperature increase.

- a. 2 °C/h b. 4 °C/h c. 3 °C/h d. 6 °C/h

$$\frac{12-4}{4 \text{ h}} = \frac{8^{\circ}\text{C}}{4 \text{ h}} = 2^{\circ}\text{C/h}$$

12. Determine $-5 \times (-10) \times (-2)$.

- a. -100 b. 25 c. -50 d. 125

13. Solve and show your work: $\frac{1}{2}x + 9 = 2$

$$\begin{aligned} \frac{1}{2}x + 9 - 9 &= 2 - 9 \\ \frac{1}{2}x &= -7 \\ 2 \times \frac{1}{2}x &= -7 \times 2 \\ x &= -14 \end{aligned}$$

14. The area of the backyard of a house is 180 m². If 1.5% of the backyard is planted with flowers, the area not covered with flowers is _____.

$$\begin{aligned} A &= 180 \text{ m}^2 \\ 1.5 \div 100 &= 0.015 \\ 0.015 \times 180 &= \text{---} \\ 180 - &= \text{---} \end{aligned}$$

15. Determine $\frac{4}{9} + \frac{1}{6} \times \frac{2}{3}$. Express your answer in lowest terms.

- a. $\frac{5}{6}$ b. $\frac{7}{9}$ c. $\frac{11}{18}$ d. $\frac{5}{9}$

$$\frac{4}{9} + \frac{1}{9} = \frac{5}{9}$$

16. $3\frac{1}{2} \div 2\frac{3}{8} =$ _____

$$\begin{aligned} \frac{7}{2} \div \frac{19}{8} &= \frac{7}{2} \times \frac{8}{19} \\ &= \frac{28}{19} \end{aligned}$$

17. What is the unit rate? There were 180 people on 3 buses.

$$\frac{180 \text{ people}}{3 \text{ buses}} = 60 \text{ people/bus}$$

18. Which is the better deal? \$3.99 for 2L of orange juice or \$4.50 for 3L of orange juice?

$$\begin{aligned} \frac{3.99}{2} &= \$0.50/\text{L} \\ \frac{4.50}{3} &= \$0.67/\text{L} \end{aligned}$$

Best Buy

19. Apples sell at 7 for 84 cents. How much for 21 apples?

$$\frac{84}{7} = 0.12 / \text{apple}$$

$$0.12 \times 21 =$$

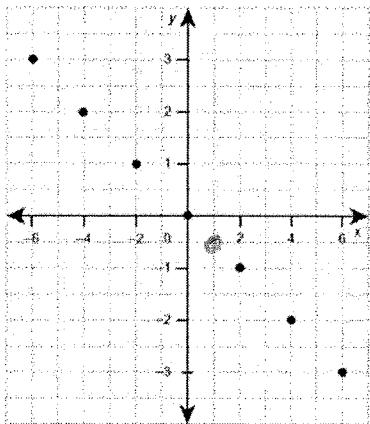
$$\boxed{\$2.52 / 21 \text{ apples}}$$

Section B— Solving simple and complex familiar problems.

If you answer most of the questions in this section (and in sections A and B) correctly you will achieve level 6 on Criterion A.

20.

The graph below represents part of the linear relation $y = \frac{x}{-2}$.



a) Use the graph to estimate y when x = 1.

$$\boxed{y = \frac{1}{-2}}$$

b) Use the equation to calculate y when x = 16.

$$y = \frac{16}{-2}$$

$$\boxed{y = -8}$$

21. When a sum of money is divided equally among three people, each person receives \$25. Write and solve an equation to determine the value of the sum of money. Verify your solution.

$$\frac{x}{3} = 25$$

$$\boxed{x = 75}$$

check

$$\frac{75}{3} = 25$$

$$25 = 25 \quad \checkmark$$

22. In a class of 30 students, $\frac{2}{3}$ have a computer in their home. Of the students who have a computer in their home, $\frac{4}{5}$ have high speed Internet access. Of the students with high speed Internet access, $\frac{1}{4}$ are using a Mac computer. What fraction of the class uses a Mac computer for high speed Internet access? How many students is this?

$$\frac{30}{1} \times \frac{2}{3} = 20 \text{ students have a computer.}$$

$$\frac{20}{1} \times \frac{4}{5} = 16 \text{ students have high speed.}$$

$$16 \times \frac{1}{4} = 4 \text{ have a Mac } \frac{4}{30} = \frac{2}{15}$$

23. Elisha plans to install a new ceiling in her basement. Each ceiling tile covers an area of 1.25 m^2 . The area of the basement ceiling is 50 m^2 . If Elisha has only 21 ceiling tiles, what percent of the ceiling can she tile?

$$1.25$$

$$50 \text{ m}^2 \div 1.25 \text{ m}^2 = 40 \text{ tiles are needed}$$

$$\frac{21}{40} = 52.5\% \text{ can be tiled.}$$

24. Mike used 2.5 kg of grass seed to cover 35.5 m^2 of lawn. How many kg of seeds would he use to cover 248.5 m^2 of lawn? Solve 2 different ways....as a unit rate and as proportional reasoning.

Unit Rate $\frac{35.5 \text{ m}^2}{2.5 \text{ kg}} = 14.2 \text{ m}^2/\text{kg}$

$$248.5 \text{ m}^2 \div 14.2 \text{ m}^2/\text{kg}$$

$$17.5 \text{ kg}$$

proportional Reasoning:

$$\frac{35.5}{2.5} = \frac{248.5}{x}$$

$$35.5x = 621.25$$

$$x = 17.5 \text{ kg}$$

25. Solve. Check your work.

$$-4 - \frac{x}{8} = -7$$

$$-\frac{x}{8} = -3$$

$$-x = -24$$

$$x = 24$$

Check

$$-4 - \frac{24}{8} = -7$$

$$-4 - 3 = -7$$

$$-7 = -7$$

Section C – Solving challenging problems in an unfamiliar situation

If you answer most of the questions in this section (and in sections A, B and C) correctly you will achieve level 8 on Criterion A.

26. $(+42) \div [(-7) - (-1)] \times (+2)^3$

$$42 \div (-6) \times 8$$

$$= -7 \times 8$$

$$= -56$$

27. A series of school trips are planned involving 384 students. One quarter of the students are to travel by train, $\frac{2}{3}$ of the students are to travel by bus, and the remainder are to travel by van. How many students are to travel by van?

$$384 \times \frac{1}{4}$$

$$= 96 \text{ students Train}$$

$$384 \times \frac{2}{3}$$

$$= 256 \text{ Bus}$$

$$\begin{array}{r} 384 \\ - 96 \\ - 256 \\ \hline \end{array}$$

$$32 \text{ by van}$$

28. Kathy earns \$8/h washing dishes. If she works overtime, she is paid \$12/h. Last week Kathy worked 48 hours. Eight of those hours were overtime. How much did Kathy earn?

$$40 \text{ h} \times \$8/\text{h} = \$320$$

$$8 \times \$12/\text{h} = \$96$$

$$\begin{array}{r} \$320 \\ + \$96 \\ \hline \end{array}$$

$$\$416$$

29. Victoria High School is planning a 24-hour relay race. Students can walk or run either 2-km or 5-km segments. There are 110 students signed up for the 2-km option and 90 for the 5-km option. Based on last year's results, 15% of students in the 2-km group and 35% of students in the 5-km group will not finish.

a) What fraction of all students entered are expected to complete their distance? Express your answer in reduced form.

b) Using last year's statistics, what do you predict will be the total distance travelled by the students who complete their segment?

$$\frac{2 \text{ km}}{110 \text{ students}}$$

$$85\% \text{ Finish}$$

$$\frac{5 \text{ km}}{90 \text{ student}}$$

$$65\% \text{ Finish}$$

$$93.5 \times 2 \text{ km}$$

$$= 187 \text{ km}$$

$$0.85 \times 110$$

$$= 93.5$$

$$= 58.5$$

$$58.5 \times 5$$

$$= 292.5 \text{ km}$$

$$\text{Total who finish } 93.5 + 58.5$$

$$= 152 \text{ student}$$

$$187 \text{ km} + 292.5 \text{ km}$$

$$= 479.5 \text{ km}$$

