Grade 6

Problem Solving Process Standards

1.	Aligns to 6.NS.10 (*√+)	6.	Aligns to 6.AF.8 (*✔)
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- 2. Aligns to 6.C.3 (*✓+) 7. Aligns to 6.AF.10 (*✓+)
- 3. Aligns to 6.C.6 (*✓+) 8. Aligns to 6.GM.3 (*✓)
- 4. Aligns to 6.AF.3 (*✓) 9. Aligns to 6.GM.4 (*✓)
- 5. Aligns to 6.AF.5 (*✓+) 10. Aligns to 6.GM.5 (*✓)
 - 11. Aligns to 6.NS.10 (*√+)
 - 12. Aligns to 6.AF.3 (*√)
 - 13. Aligns to 6.AF.3 (*✓)
 - 14. Aligns to 6.AF.10 (*√+)
 - 15. Aligns to 6.GM.5 (*√)

Directions for teachers:

Do 1 or 2 of these problems per week. Grade them and go over them in class.

Please give these directions to your students:

- Step 1: Show all work on each problem.
- Step 2: Calculators can be used.
- Step 3: You will be given **8 minutes**.

1.

Part A

Robert can paint 200 square feet in 45 minutes. At the same rate, how many square feet can Robert paint in 6 hours?

Show Work

Anciwor	cauaro	foot
Allswei	square	1001

Part B

Robert has 6 gallons of paint to begin painting his grandfather's house. This is 40% of the total amount of paint needed to finish the job. How many gallons of paint does Robert need to paint the entire house?

Show Work

Answer ______gallons

2.

Part A

Jimmy works at a local pizza shop as a cook. He worked three days last week. The chart shows Jimmy's hours worked and money earned.

TuesdayFridaySaturdayHours Worked $7\frac{1}{2}$ hours $6\frac{2}{3}$ hours $7\frac{1}{2}$ hoursMoney(\$) Earned\$90\$80\$90

How much money does Jimmy earn per hour? Show Work

Answer \$_____

Part B How many hours did Jimmy work last week? Show Work



3.

Part A

Three students in Mr. Lee's 6^{th} grade math class solved the problem $3 + 7 \times 5 + 6(8^2 - 4)$. The work and solution for all three students are shown below.

Ellen 3 + 7 x 5 + 6(8² – 4) =	Todd 3 + 7 x 5 + 6(8² – 4) =	Lisa 3 + 7 x 5 + 6(8² – 4) =
3 +7 x 5 + 6(64 - 4) =	3 +7 x 5 + 6(16 - 4) =	3 +7 x 5 + 6(64 - 4) =
3 + 7 x 5 + 6(60) =	3 + 7 x 5 + 6(12) =	3 + 7 x 5 + 6(60) =
3 + 35 + 6(60) =	3 + 35 + 6(12) =	50 + 6(60) =
3 + 35 + 360 =	3 + 35 + 72 =	50 + 360 =
Answer 398	Answer 110	Answer 410

Which student Ellen, Todd, or Lisa had the correct work and solution?

Part B

Pick **<u>one</u>** of the two students above that had incorrect work shown and the incorrect solution shown. Circle where the first error happened. **Explain** the error made in words.

С

4.

Part A

A quadrilateral shown has sides with lengths c, d, and f.

Using the variables c, f, and d write an expression for the perimeter of the quadrilateral.

Expression _____

Part B Find the perimeter of the quadrilateral when c = 10 , f = 8, and d = 14. **Show Work**



5. Part A

The number of brownies (b) plus two is 14. How many brownies do I have?

Select the correct equation that describes this problem. Circle the correct equation.

2 - b = 14 b - 2 = 14 2 b = 14 b + 2 = 14

Part B Use the equation that you circled above to find the number of brownies I have. Show Work

Answer ______ brownies



6.

Part A Jerry's house is located on the grid at point H (3, 1.5). Find the location of Jerry's house on the grid. Label the point H.

Part B

Jerry's School is located on the grid at point S (3, -2.5) Find the location of Jerry's school on the grid. Label the point S.

Part C

How many units apart is Jerry's house from Jerry's school? **Show Work**



Answer_____units

Part D

Each unit represents 5 blocks. How many blocks is Jerry's house from Jerry's school? **Show Work**

Answer_____blocks



7.

Part A

Maria is a member of a fitness club. She pays a flat rate of \$20 per month for her membership. Use the grid below to plot points to show the relationship between months and cost. Connect the points with a line.



Show Work

Answer \$_____



8.

Part A

Three of the four coordinates of a soccer field in the shape of rectangle are given as follows. A(-4, 2), B(-4, -3), and C(5, -3).

Plot these three points on the grid. Make sure after the points are plotted they are labeled.



Part B

Find the missing coordinates of the fourth **point D** to complete the shape of rectangular soccer field. After you find the coordinates of point D, plot point D on the grid. Finish the shape of soccer field connecting the points with line segments.

Answer <u>D(,)</u>

Part C Find the area of the soccer field. **Show Work**

Answer_____square units

9.

The complex shape is a picture of Mr. Wells' garden.



10.

Part A

A sandbox is built in the shape of right rectangular prism as shown.

The dimension of the sandbox is also shown.

Find the volume of the sandbox. Show Work





Area of Rectangle = lwArea of Triangle = $\frac{1}{2}$ bh Area of Parallelogram = bhArea of Trapezoid = $\frac{1}{2}h(b1 + b2)$ Volume of Right Rectangular Prism = lwh or Bh

Answer_____cubic feet

Part B

The sandbox is filled 40% of the way with sand. Find the volume of sand in the sandbox. **Show Work**





11.

Last month Madison used 600 minutes on her Super Cell Phone Plan talking and texting. She talked to friends for 120 minutes.

Part A How many minutes did Madison spend texting? Show your work.

Answer: ______minutes

Part B What is the ratio of talking minutes to texting minutes? Express the ratio in simplest form.

Show your work.

Answer: _____

Part C Convert the answer from Part B to a decimal and percent. Show your work.

Percent Answer: _____



12.

Part A

At the Raging Rapids Waterpark a child's admission costs \$11.00. Write an equation to represent the total amount "t" in dollars, for "c" children admissions.

Equation: _____

B)

Use the equation you wrote in part A to find out how much money, in dollars, that it would cost the 6th grade class to spend a day at the Raging Rapids Waterpark.

The 6th grade class has 25 students.

Show your work

Answer: _____

13.

Joey needs to rent a waste dumpster for a construction project. The dumpster rental costs are described in the box.

Part A What is the total cost of renting a dumpster for 8 days? **Explain how you got your answer.**

Total Cost of Dumpster Rental
Delivery fee: \$210
PLUS \$20 rental charge per day

Answer_____

Part B

Write an equation that could be used to compute the total cost, y in dollars, of renting the dumpster for x days.

Equation: _____

Part C

Joey's total cost of renting a dumpster must be less than \$1000. What is the greatest number of whole days that Joey can rent the dumpster?

Show how you got your answer.

Answer: _____



14.

Carrie's rectangular garden has the dimensions shown below.



A. What is the area, in square feet, of Carrie's garden? Show or explain how you got your answer.

Answer: ______ square feet

B. Carrie wants to put a fence along the perimeter of her garden. She will pay \$15 per foot of fence that she uses. What is the amount of money, in dollars, that Carrie will pay for the fence? Show or explain how you got your answer.

Answer: \$ _____

C. Ron has a garden in the shape of a square. The perimeter of his garden is the same as the perimeter of Carrie's garden. What is the area of Ron's garden?

Show or explain how you got your answer.

Answer: _____

Name:



15.

Shawn has a right rectangular r prism with the dimensions shown below.



Area of Rectangle = lwArea of Triangle = $\frac{1}{2}$ bh Area of Parallelogram = bhArea of Trapezoid = $\frac{1}{2}h(b1 + b2)$ Volume of Right Rectangular Prism = lwh or Bh

Formulas

A. What is the area, in square centimeters, of the shaded face of the right rectangular prism?

Show or explain how you got your answer.

Answer: ______ square centimeters

B. What is the volume, in cubic centimeters, of the right rectangular prism? Show or explain how you got your answer.

Answer: ______ cubic centimeter