



Get Ready for 8th Grade (Pre-Algebra)- Summer Work Instructions

It is important to keep your skills sharp to be ready for math this fall. This summer work is a review of the most important concepts you have learned this past year.

1. Print and complete these [work pages](#). You must show all of your work! Bring them to your math teacher on or before September 19th. This work will be part of your first marking period grade.
2. Study all multiplication facts. You can use flashcards or online games to practice. You should know all facts 1-12 quickly and automatically.

| X | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

Unit 1 Practice

Name: _____

The Number System

| In this unit you learned to: | Lesson |
|---|---------|
| add and subtract positive and negative integers, for example: $-3 + (-4) = -7$. | 1, 2, 3 |
| multiply and divide positive and negative integers, for example: $-2 \cdot (-4) = 8$. | 4 |
| add and subtract rational numbers, for example: $-2.5 + 3.8 = 1.3$. | 7 |
| multiply and divide rational numbers, for example: $-\frac{1}{4} \div \frac{1}{3} = -\frac{3}{4}$. | 6 |
| solve word problems with rational numbers. | 6, 7, 8 |

Use these skills to solve problems 1–8.

1 Which of the following equations are true? Select all that apply.

- A $7 + (-7) = 14$
- B $-4 + 9 = 5$
- C $3 - (-10) = -7$
- D $-2 - 6 = -8$

2 Which expression is equivalent to $5 - 14$? Select all that apply.

- A $-3 \cdot 3$
- B $9 \div (-1)$
- C $-5 + 14$
- D $14 - (-5)$

3 A football team loses 3 yards, gains 12 yards, gains 10 yards, and then loses 15 yards. Did the team gain yards or lose yards overall? How many yards?

Show your work.

Solution: _____



Solve.

- 4 Tell whether each fraction, $\frac{1}{n}$, is written as a terminating decimal or a repeating decimal for the given values of n . Write *T* for terminating or *R* for repeating.

| | | | | | | | | |
|----------|---|---|---|---|---|---|---|----|
| <i>n</i> | 2 | 3 | 4 | 5 | 6 | 8 | 9 | 10 |
| Fraction | | | | | | | | |

- 5 Patrick recorded the daily changes of the value of a stock in dollars: -3.40 , -8.09 , -2.47 , 1.86 , and 3.55 . What was the average daily change in the stock's value in dollars?

Show your work.

Solution: _____

- 6 A fish's position changes by -2.4 feet per second. How long will it take the fish to change its position by -13.2 feet?

- A 0.18 seconds
- B 5.5 seconds
- C 10.8 seconds
- D 31.68 seconds

- 7 A pelican flies $2\frac{1}{4}$ feet above the surface of the ocean. A dolphin swims $10\frac{1}{2}$ feet below the surface. How far apart are the dolphin and the pelican?

Show your work.

Solution: _____

- 8 Given the four rational numbers below, find the greatest difference and the greatest product using two of the numbers for each operation.

$2\frac{1}{3}$ 1.5 -1.25 $-3\frac{1}{4}$

Greatest difference: _____

Greatest product: _____

Unit 2 Practice

Name: _____

Ratios and Proportional Relationships

| In this unit you learned to: | Lesson |
|--|--------|
| find unit rates with complex fractions, for example: $\frac{1}{4}$ cup oats per $\frac{1}{2}$ cup flour = $\frac{1}{2}$ cup oats per 1 cup flour. | 9 |
| identify proportional relationships and the constant of proportionality. | 10 |
| graph proportional relationships. | 10 |
| interpret equations and graphs of proportional relationships. | 11 |
| solve multi-step percent problems involving tax, tips, markups, etc., for example: $\$5.00 + 5\% \text{ tax} = 5 \times 1.05 = \5.25 . | 12 |
| solve multi-step percent problems involving percent change or percent error. | 13 |

Use these skills to solve problems 1–8.

1 Janelle can walk $3\frac{3}{4}$ miles in $1\frac{1}{2}$ hours. At this rate, how many miles can Janelle walk in 4 hours?

2 You give a delivery driver \$15.50 for a pizza that costs \$12.50. You tell the driver to keep the change as a tip. Is the tip *more* than or *less* than 20%?

3 One week Anil earned \$4 per hour. The next week he earned \$4.50 per hour. What was the percent increase in his hourly rate?

- A 0.5%
- B 11%
- C 12.5%
- D 89%

4 Which expression CANNOT be used to calculate the sale price of a fish tank that was originally priced at d dollars and is on sale for 25% off? Select all that apply.

- A $d - 0.25d$
- B $1.25d$
- C $0.75d$
- D $1.7d$



Solve.

5 Does the equation represent a proportional relationship? Select *Yes* or *No*.

- a. $y = 4x$ Yes No
- b. $y = 4x + 3$ Yes No
- c. $y = \frac{1}{2}x$ Yes No
- d. $y = \frac{1}{2}x - 5$ Yes No

6 A store sells packages of 3 pens for \$1.50, 8 pens for \$4.00, and 12 pens for \$6.00. Let c represent the total cost and p represent the number of pens. Write an equation to represent this situation.

7 A principal estimated that 400 people attended the performance of the school play. After counting the tickets, he found that 423 people attended. What was the percent error in the principal's estimate?

Show your work.

Solution: _____

8 The point $(5\frac{5}{8}, 2\frac{1}{4})$ lies on a line that represents a proportional relationship.

Part A

Write an equation for this relationship. What is the constant of proportionality?

Part B

The point $(6\frac{1}{2}, y)$ also lies on the line. What is the y -coordinate of the point?

Unit 3 Practice

Name: _____

Expressions and Equations

| In this unit you learned to: | Lesson |
|---|--------|
| find equivalent linear expressions, for example: $1.2x + 1.3x + 0.2y + 0.1y = 2.5x + 0.3y$. | 14 |
| rewrite linear expressions in different ways, for example: $x + 0.2x = 1.2x$. | 15 |
| solve problems with equations. | 16 |
| solve problems with inequalities. | 17 |

Use these skills to solve problems 1–7.

1 Which expression is equivalent to $4x - 5$? Select all that apply.

- A $3(2x - 5) - 2(x - 5)$
- B $3x - 2 - (3 - x)$
- C $7x + 1 - 3(x + 2)$
- D $4(2x - 1) - 2(2x - 1)$

2 Penny solved an equation by subtracting 6 from each side of the equation and then dividing each side by 5. Which of these could have been the equation Penny solved?

- A $\frac{1}{5}x + 6 = 11$
- B $5x - 6 = 9$
- C $5x + 6 = 21$
- D $6x + 5 = 17$

3 Marco sells and ships oranges from the trees in his orange grove for \$1.25 per pound plus a shipping fee. One package has a shipping fee of \$4.95 and a total cost of \$11.20. Write and solve an equation to find the number of pounds of oranges in the package.

Show your work.

Solution: _____



Solve.

4 A store is having a sale in which the cost of any item is 35% off. Can the expression be used to find the cost, x , of an item? Select *Yes* or *No*.

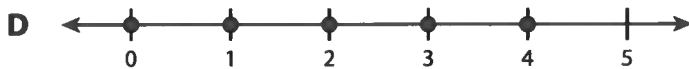
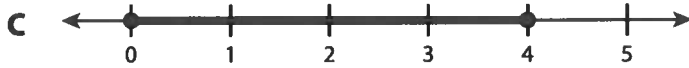
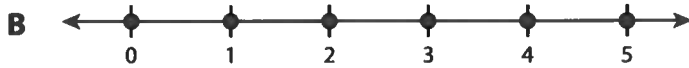
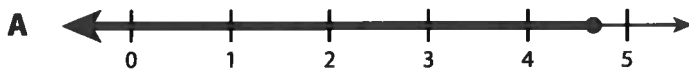
- a. $0.35x$ Yes No
b. $0.65x$ Yes No
c. $x + 0.35x$ Yes No
d. $x - 0.35x$ Yes No

5 Solve the inequality $4 - 3x > 16$.

Show your work.

Solution: _____

6 Barry has \$30.00. He spends \$9.00 for lunch. Puzzle magazines cost \$4.50 each. Which graph shows how many puzzle magazines Barry could buy?



7 The perimeter of a rectangle is $18x + 6$. The width of the rectangle is $2x + 5$. What is an expression for the length of the rectangle?

Show your work.

Solution: _____

Unit 4 Practice

Name: _____

Geometry

| In this unit you learned to: | Lesson |
|--|--------|
| solve problems with angles. | 18 |
| draw triangles to meet given conditions. | 19 |
| find the area of composed figures and circles. | 20, 21 |
| solve problems with scale drawings. | 22 |
| find the surface area and volume of solid figures. | 23, 24 |
| describe plane sections of prisms and pyramids. | 25 |

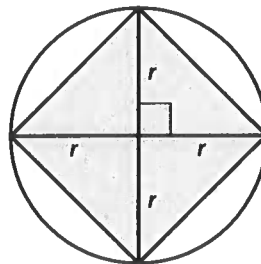
Use these skills to solve problems 1–6.

1 The measure of $\angle ABC$ is 40° .

Part A: What is the measure of the supplement of $\angle ABC$?

Part B: What is the measure of the complement of $\angle ABC$?

2 What is the ratio of the area of the circle to the area of the quadrilateral? Write your answer in terms of π .



3 Kamilah has a cone. She slices it in several different ways. Which of these *cannot* be the shape of one of the cross-sections?

- A circle
- B triangle
- C oval
- D rectangle

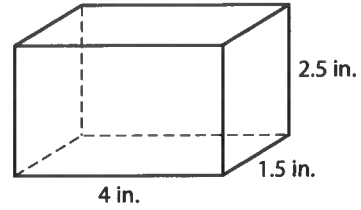
4 From which measures can a triangle be drawn? Select all that apply.

- A angles 40° , 40° , and 100°
- B angles 50° , 75° , and 95°
- C sides 4 cm, 4 cm, 10 cm
- D sides 6 cm, 8 cm, 10 cm



Solve.

- 5** A construction company uses a model of a concrete block in the design of a building. The model is shown, and its scale is 1 inch = 2 feet.

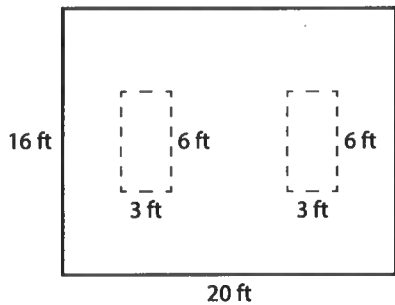


Part A: What are the actual dimensions of the concrete block?

Part B: What is the surface area of one concrete block in square feet?

Part C: Fifty of the concrete blocks are needed for the building. What is the volume of the concrete needed to make 50 blocks?

- 6** Mark wants to paint the wall shown below.



The wall has two windows. What is the area of the wall that can be painted?

Show your work.

Solution: _____

Solve.

- 5 In baseball, a good hitter will get a hit 3 times out of every 10 times at bat. Vince ran an experiment in which a computer generated a random number from 00 to 99. He assigned the numbers 00 to 29 to represent a hit.

Part A: Is the experiment valid? Explain.

Part B: After generating 200 random numbers, Vince counted 48 numbers from 00 to 29. Is this batter likely to be a good hitter? Explain.

- 6 The box plots show the results for two different classes on the same test. Select whether each statement is *True* or *False*.



- a. The range for Class B is less than the range for Class A. True False
- b. The mean and MAD can be determined from the box plot. True False
- c. Class A likely has a higher MAD than Class B. True False
- d. The interquartile range for Class B is greater than the interquartile range for Class A. True False
- e. The median score for Class B is less than the median score for Class A. True False