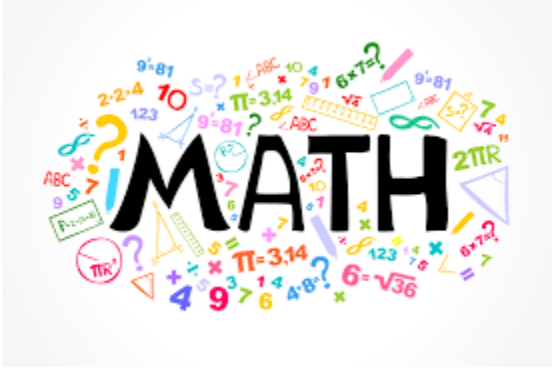
Summer Mathematics Packet
Students Entering Grade 8 (Pre-Algebra)

(30 Points towards First Semester Grade)

Name _____

Grade Entering _____

Please submit this to your math teacher by September 8, 2025



Solve each equation.

1. $x + 5 = 25$ _____

2. $x + 4 = 7$ _____

3. $x - 3 = 7$ _____

4. $x - 2 = 6$ _____

5. $19x = 76$ _____

6. $5x = 70$ _____

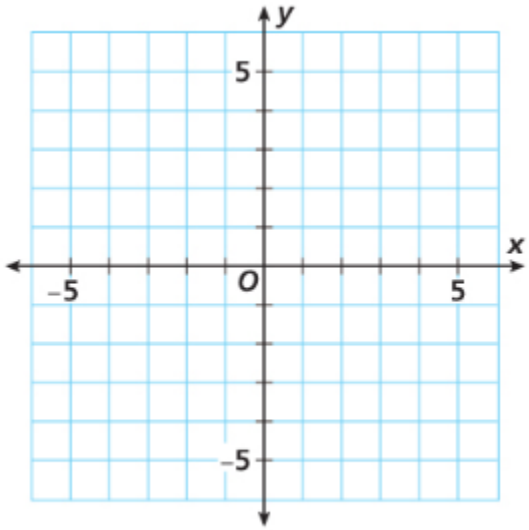
7. $\frac{x}{4} = 12$ _____

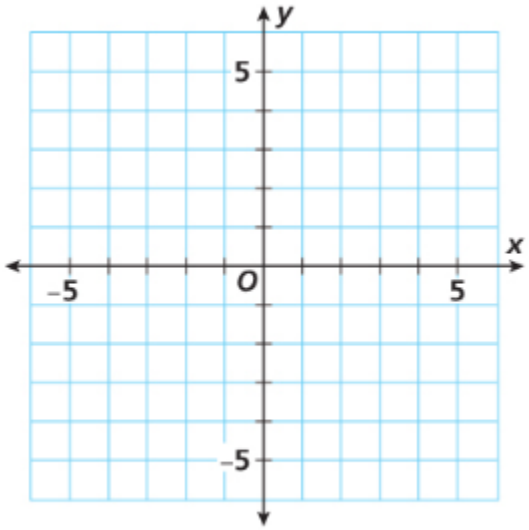
8. $\frac{x}{3} = 8$ _____

Draw each polygon in the coordinate plane.

1. Triangle *ABC* has vertices *A*(−4, 3), *B*(3, 1), and *C*(1, −3).

2. Quadrilateral *FGHJ* has vertices *F*(−2, −3), *G*(−2, 4), *H*(1, 4), and *J*(5, −3).



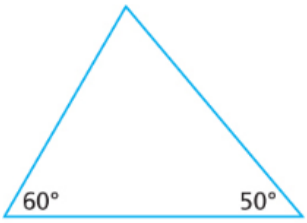


Simplify each expression.

1. $x + 2x + 48$ **2.** $(n + 7) + 3(n + 1) + 90$ **3.** $180 - (68 + a)$

Identify the missing angle in each triangle:

1)



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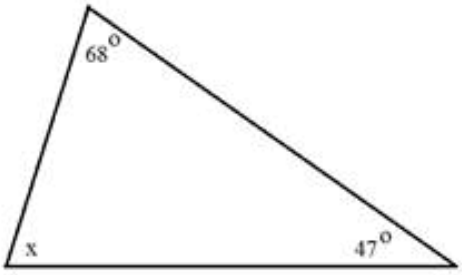
2)



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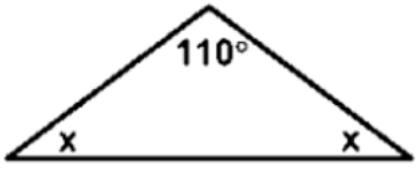
3)



_____D

Calculate each sum or difference.

$15 - 7 =$	$10 - -2 =$
$14 - 3 =$	$-2 + 14 =$
$-15 - -15 =$	$7 - 10 =$
$15 - -8 =$	$-12 - 15 =$
$10 - 9 =$	$-4 - -10 =$
$10 - -5 =$	$1 + 14 =$
$15 + -12 =$	$5 - -15 =$
$9 - -5 =$	$-12 + -2 =$
$-6 - -15 =$	$-8 + 13 =$
$-15 - 9 =$	$11 - -3 =$
$-15 - -2 =$	$-4 - 12 =$
$-14 + -1 =$	$-14 + 5 =$
$-14 + -12 =$	

Calculate each product or quotient.

$-88 \div (-8) =$	$12 \times 11 =$
$11 \times (-10) =$	$14 \div (-7) =$
$72 \div 8 =$	$90 \div 10 =$
$90 \div 9 =$	$-18 \div 9 =$
$99 \div 9 =$	$-10 \times (-8) =$
$10 \times (-11) =$	$70 \div 10 =$
$-108 \div 12 =$	$-5 \times (-3) =$
$100 \div (-10) =$	$5 \times 9 =$
$-12 \times (-9) =$	$11 \times 12 =$
$80 \div 10 =$	$-72 \div 9 =$
$120 \div (-10) =$	$2 \times (-2) =$
$-11 \times (-11) =$	$12 \times 12 =$
$88 \div 11 =$	

Adding Fractions with Unlike Denominators - Answers must be in SIMPLEST FORM

$\frac{2}{3} + \frac{3}{4} =$ _____

$\frac{1}{9} + \frac{5}{8} =$ _____

$\frac{1}{6} + \frac{5}{7} =$ _____

$\frac{4}{7} + \frac{1}{10} =$ _____

Multiplying Proper Fractions - Answers must be in SIMPLEST FORM

$\frac{6}{7} \times \frac{1}{6} =$ _____

$\frac{3}{4} \times \frac{2}{7} =$ _____

$\frac{2}{3} \times \frac{1}{8} =$ _____

Multiplying Improper Fractions - Answers must be in SIMPLEST FORM

$\frac{11}{4} \times \frac{2}{3} =$ _____

$\frac{8}{3} \times \frac{2}{4} =$ _____

$\frac{3}{8} \times 5\frac{1}{3} =$_____

$\frac{2}{5} \times 3\frac{3}{4} =$_____

Dividing Fractions and Whole Numbers - Answers must be in SIMPLEST FORM

$12 \div 5 =$ _____

$10 \div 3 =$ _____

$8 \div \frac{2}{5} =$ _____

$\frac{3}{5} \div 4 =$ _____

$\frac{5}{7} \div 2 =$ _____

$4 \div \frac{1}{7} =$ _____

$3 \div \frac{5}{7} =$ _____

A team can spend no more than $300 on shirts. The team has already spent $80. How many shirts for $15 each can they still buy?

A. Write the inequality that represents the situation. _____

B. Explain why you chose the inequality sign.

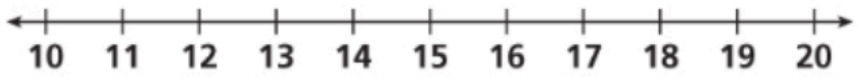
_____

C. Without solving, explain how you know that 20 is not a solution.

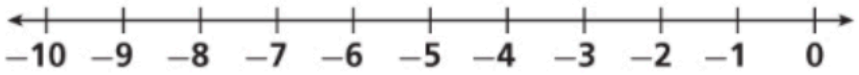
_____

Solve each inequality and graph the solution:

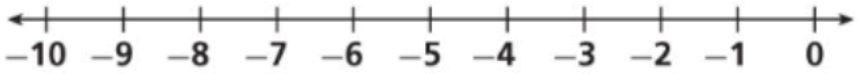
$-5y + 47 > -13$



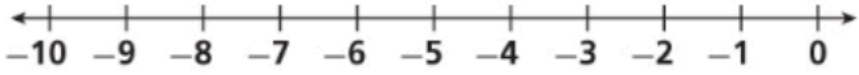
$18 - 4z \geq 26$



$8g + 30 < -2$

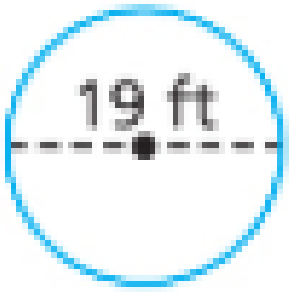


$-7s - 4 \leq 10$

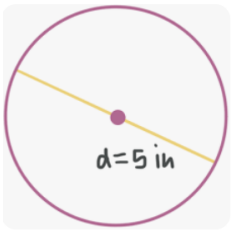


At a park, the jogging trail is a circle with a radius of 200 meters. How far is it around the trail? Use 3.14 for π. Show your work.

Find the circumference of each circle:



Find the area of each circle:



Converting Between Percents, Decimals, and Fractions

Convert Decimal to Percent

0.949 =	1.74 =	0.25 =
0.26 =	0.61 =	0.117 =

Convert Percent to Decimal

56.6 % =	192 % =	83 % =
179 % =	89 % =	106 % =

Convert Decimal to Fraction

0.38 =	1.2 =	0.51 =
0.48 =	1.84 =	0.134 =

Convert Fraction to Decimal

$\frac{1}{16}$ =	$\frac{53}{50}$ =	$\frac{82}{50}$ =
$\frac{1}{8}$ =	$\frac{7}{20}$ =	$\frac{32}{20}$ =

Convert Fraction to Percent

$\frac{33}{20}$ =	$\frac{36}{50}$ =	$\frac{1}{16}$ =
$\frac{17}{20}$ =	$\frac{39}{25}$ =	$\frac{15}{20}$ =

Convert Percent to Fraction

7 % =	32 % =	88.1 % =
135 % =	22.2 % =	17 % =

$8.2 \times 9.499 =$ _____

$3.268 \div 86 =$ _____

$9.3 \times 4.2 =$ _____

$11.4 + 61.3 =$ _____

$9.8 \times 7.51 =$ _____