



SAGEMONT

PREPARATORY SCHOOL

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

Points: 30

Solve each equation.

1. $x + 5 = 25$ _____

2. $x + 4 = 7$ _____

3. $x - 3 = 7$ _____

4. $x - 2 = 6$ _____

5. $19x = 76$ _____

6. $5x = 70$ _____

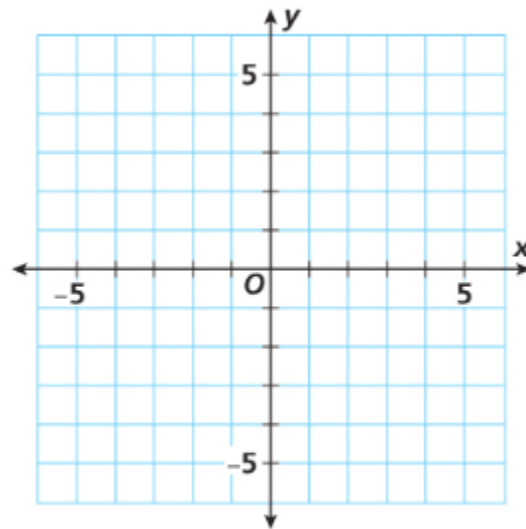
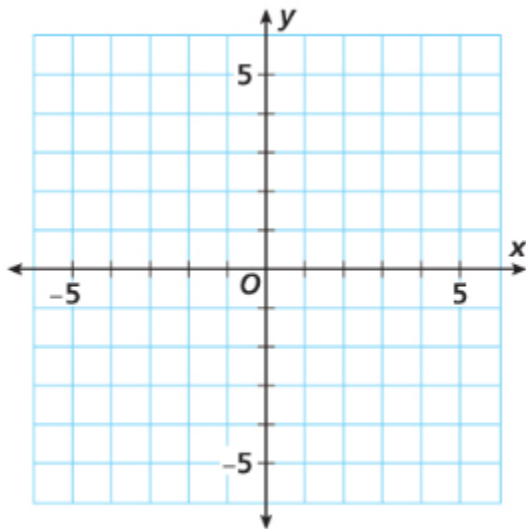
7. $\frac{x}{4} = 12$ _____

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.

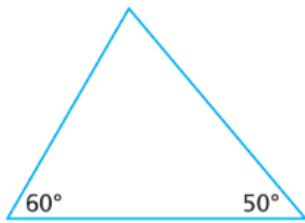
1. $x + 2x + 48$

2. $(n + 7) + 3(n + 1) + 90$

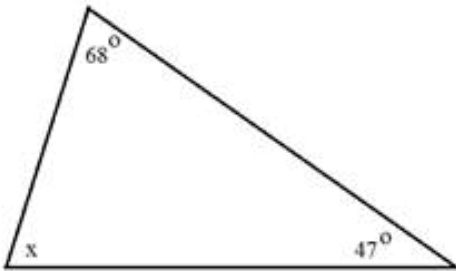
3. $180 - (68 + a)$

Identify the missing angle in each triangle:

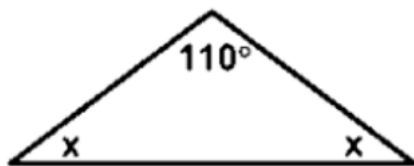
1)



2)



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.

$$-88 \div (-8) = \quad 12 \times 11 =$$

$$11 \times (-10) = \quad 14 \div (-7) =$$

$$72 \div 8 = \quad 90 \div 10 =$$

$$90 \div 9 = \quad -18 \div 9 =$$

$$99 \div 9 = \quad -10 \times (-8) =$$

$$10 \times (-11) = \quad 70 \div 10 =$$

$$-108 \div 12 = \quad -5 \times (-3) =$$

$$100 \div (-10) = \quad 5 \times 9 =$$

$$-12 \times (-9) = \quad 11 \times 12 =$$

$$80 \div 10 = \quad -72 \div 9 =$$

$$120 \div (-10) = \quad 2 \times (-2) =$$

$$-11 \times (-11) = \quad 12 \times 12 =$$

$$88 \div 11 =$$

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

$$\frac{2}{3} + \frac{3}{4} = \underline{\hspace{2cm}}$$

$$\frac{1}{9} + \frac{5}{8} = \underline{\hspace{2cm}}$$

$$\frac{1}{6} + \frac{5}{7} = \underline{\hspace{2cm}}$$

$$\frac{4}{7} + \frac{1}{10} = \underline{\hspace{2cm}}$$

Multiplying Proper Fractions - Answers must be in SIMPLEST FORM

$$\frac{6}{7} \times \frac{1}{6} = \underline{\hspace{2cm}}$$

$$\frac{3}{4} \times \frac{2}{7} = \underline{\hspace{2cm}}$$

$$\frac{2}{3} \times \frac{1}{8} = \underline{\hspace{2cm}}$$

Multiplying Improper Fractions - Answers must be in SIMPLEST FORM

$$\frac{11}{4} \times \frac{2}{3} = \underline{\hspace{2cm}}$$

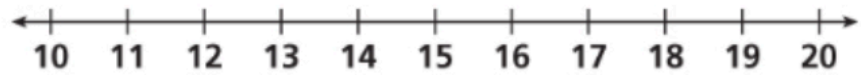
$$\frac{8}{3} \times \frac{2}{4} = \underline{\hspace{2cm}}$$

$$\frac{3}{8} \times 5\frac{1}{3} = \underline{\hspace{2cm}}$$

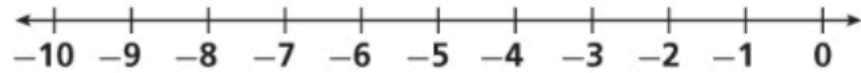
$$\frac{2}{5} \times 3\frac{3}{4} = \underline{\hspace{2cm}}$$

Solve each inequality and graph the solution:

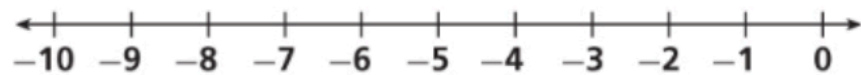
$$-5y + 47 > -13$$



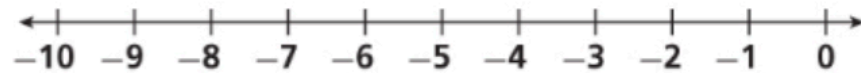
$$18 - 4z \geq 26$$



$$8g + 30 < -2$$

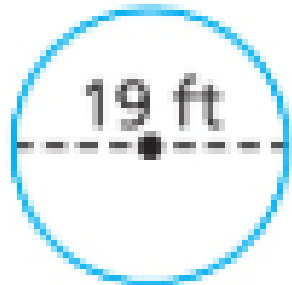


$$-7s - 4 \leq 10$$

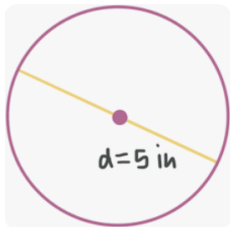


At a park, the jogging trail is a circle with a radius of 200 meters. How far is it around the trail? Use 3.14 for π . Show your work.

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

$7 \% =$

$32 \% =$

$88.1 \% =$

$135 \% =$

$22.2 \% =$

$17 \% =$

$8.2 \times 9.499 = \underline{\hspace{2cm}}$

$3.268 \div 86 = \underline{\hspace{2cm}}$

$9.3 \times 4.2 = \underline{\hspace{2cm}}$

$11.4 + 61.3 = \underline{\hspace{2cm}}$

$9.8 \times 7.51 = \underline{\hspace{2cm}}$