

## Practice Math Test for PTA Program:

### Basic Operations on Integers:

1. Evaluate:  $2(4 - 6) + 3 =$
2. Evaluate:  $(6 - 12) + (15 + (4 - 20)) =$
3. Evaluate:  $4 - 6 \div 2 \cdot -3 + 5 =$
4. Evaluate:  $(12 - 7)^2 \div 5 - 2 =$

### Basic Operations on Fractions:

5. Evaluate:  $\frac{5}{4} + \frac{9}{8} =$
6. Evaluate:  $\frac{2}{7} - \frac{3}{5} =$
7. Evaluate:  $\frac{5}{9} \cdot \frac{3}{10} =$
8. Evaluate:  $\frac{11}{15} \div \frac{22}{3} =$
9. Evaluate:  $\frac{4}{5} \left( \frac{2}{3} - \frac{7}{6} \right) + \left( \frac{1}{2} \div \frac{5}{8} \right) =$

### Ratios:

10. A pattern has 3 blue triangles to every 18 yellow triangles. What is the ratio of yellow triangles to blue triangles?
11. A bag contains 9 red marbles and 7 blue marbles. What is the ratio of red marbles to the total marbles?
12. A pattern has 5 blue triangles to every 20 yellow triangles. What is the ratio of yellow triangles to all triangles?

### Convert Between Fractions (Ratios), Decimals and Percents:

13. Write  $\frac{4}{5}$  as a decimal and percent

14. Write 35% as a decimal and a fraction

15. Write 1.25 as a percent and a fraction

### Comparing Fractions and Decimals: use $<$ , $>$ or $=$ to compare each of the following

16.  $\frac{15}{4}$        $\frac{16}{11}$

17.  $\frac{6}{5}$        $\frac{30}{25}$

18. 0.012      0.12

19. 1.201      1.015

### Calculations with Percents:

20. What is 25% of 60?

21. 45 is what percent of 130?

22. A 40% increase of 30 is how much?

23. A decrease from 70 to 36 is what percent?

### Conversions:

24. Convert 3.5 feet to inches

25. Convert 4 inches to centimeters

26. Convert 27 centimeters to millimeters

27. Convert 62 millimeters to inches

28. Convert 1.38 liters to kiloliters

29. Convert 1.5 gallons to cups

30. Convert 70°F to Celsius

31. Convert 22°C to Fahrenheit

Solving Proportions Word Problems:

32. If there is \$15 in a drawer and the ratio of money in the drawer to money in the piggy bank is 3:5, then how much money is in the piggy bank?

33. You have 10 apples and the ratio of apples to oranges is 5:2, so how many oranges do you have?

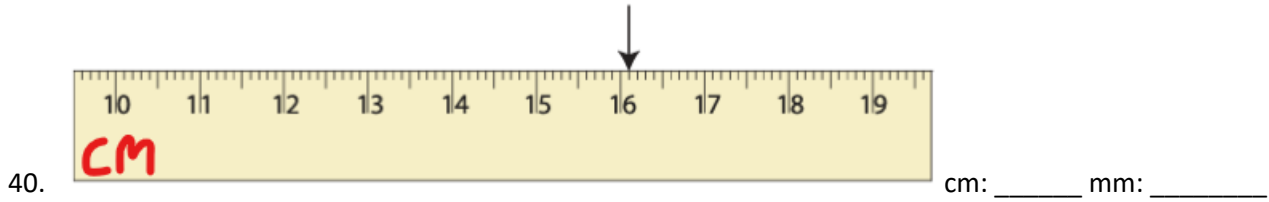
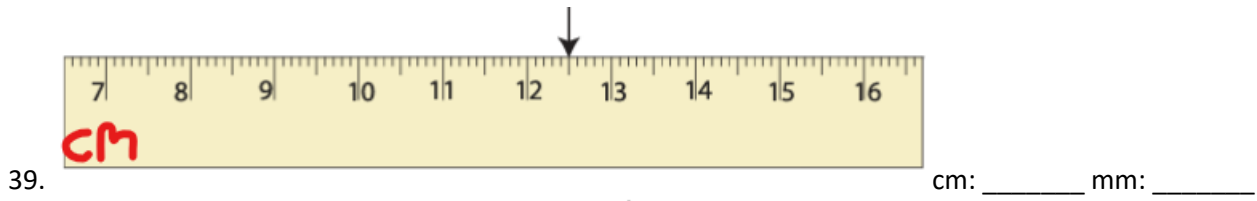
34. Knowing there are 2.2 pounds in one kilogram, how many kilograms does a person weigh if they are 165 pounds?

35. Knowing there are 2.2 pounds in one kilogram, how many pounds does a person weigh if they are 62 kilograms?

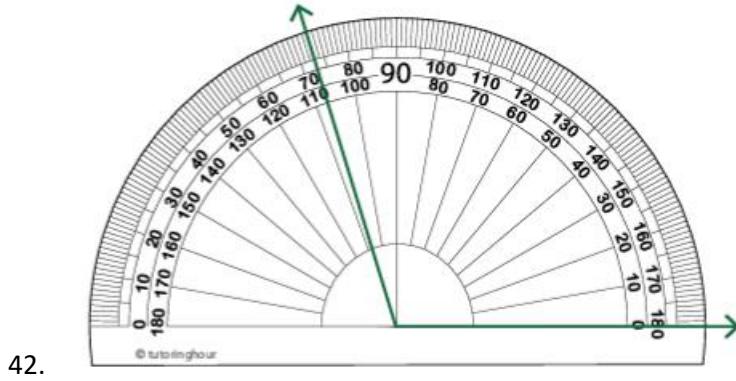
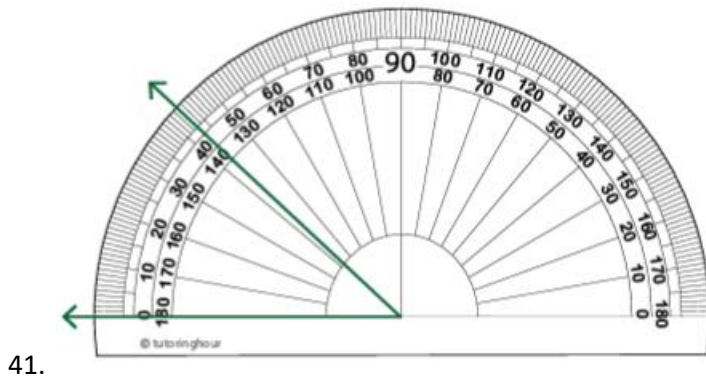
36. Knowing there are 60 drops in a teaspoon, how many teaspoons are 105 drops?

Reading a ruler: give the measurements indicated by the pointer





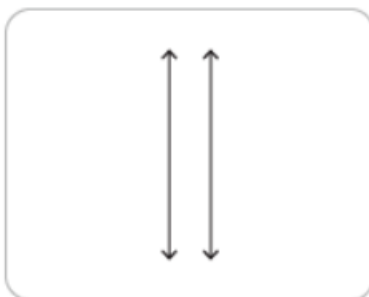
Reading a Protractor:



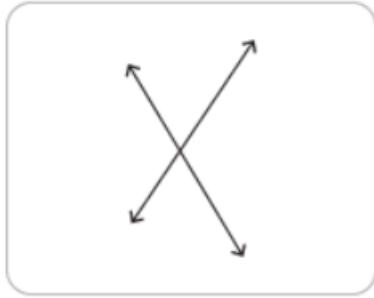
Parallel and Perpendicular Lines:

Name the following pairs of lines as parallel, perpendicular, or intersecting lines

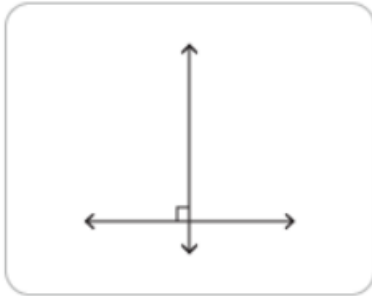
43.



44.



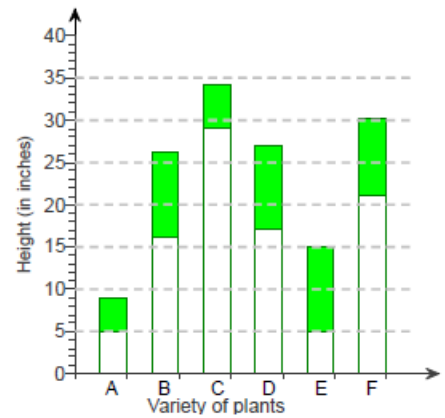
45.



Reading Charts and Graphs:

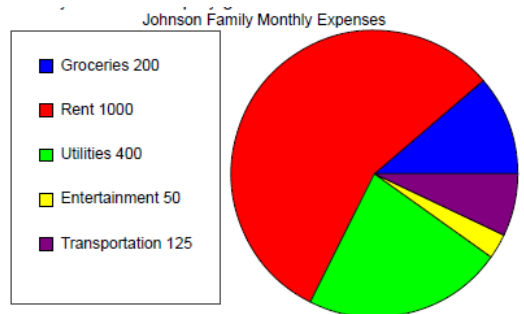
46. The following vertical bar graph shows the range of heights for each variety of plant. The shaded portion of each bar illustrates the range of heights for the plant.

- a. Which plant has a minimum height of 16 inches?
- b. What is the maximum height of this plant?
- c. Which plant has the smallest range in height?



47. The pie chart shows the amount of money the Johnson family spends each month on their bills.

- a. What expenditure is the largest? Which is smallest?
- b. What is the ratio of rent to utilities?
- c. What percent of their monthly expenses are groceries?



Simplify Algebraic Expressions:

48.  $4x^2 - 5x^2 - 6x + 10x + 5 + 7 =$

49.  $2(4x + 3) =$

50.  $(2x + 4)(-3x + 5) =$

Solving: find the value of  $x$  that makes the equation true

51.  $x + 6 = 10$

52.  $-5 + x = 12$

53.  $4x = -8$

54.  $\frac{2}{3}x = 5$

55.  $-x - 6 = 15$

56.  $6x + 2 = 14$

57.  $4(x - 5) = 2$

58. Consider:  $\frac{x^2-4}{3y}$  evaluate when  $x = -4$  and  $y = 1$

59. Consider:  $(3x - (y + 2z)) - 1 = xz + y$ . Find the value of  $x$  if  $y = 2$  and  $z = 4$

60. A car is moving at a speed of 45 miles per hour. If the driver doubles the speed of the car, then what would be the distance traveled in the next 2 hours? Use the formula  $d = rt$