TERRA NOVA TEST

MATHEMATICS SAMPLES
GRADE 7

1. You buy 1.25 pounds of apples and 2.45 pounds of bananas. After you use a $.75 off coupon, the total cost is $2.58. Apples and bananas sell for the same price per pound.

   Which of these questions can you answer from the information given?

   a. How many apples do you have?
   b. How much do the apples cost per pound?
   c. What is the total cost of the bananas?

2. Parts to fix your car cost $55.35. The mechanic charges $35 per hour for labor. The final bill is $177.85.

   Which of these questions can you answer from the information given?

   a. How much did each part used to fix the car cost?
   b. How many hours did the mechanic work on your car?
   c. What was the cost of labor only?

3. Suppose you have $22.85 to spend at an amusement park. Admission costs $12.50. How many ride tickets can you purchase at $.75 each?

4. A new exhibit opens that included both harbor seals and sea otters. The number of harbor seals is 7 more than twice the number of sea otters. There are 13 harbor seals in the exhibit. How many sea otters are there?

5. As you get ready for school, the morning weather reporter says that the temperature is expected to rise by 27° F. The high temperature is expected to be 55^oF. What is the temperature now?

6. You want to go to Africa for a photo safari. You need $2,800. You can get $1,000 from your savings and family and you can save $30 per week. How many weeks will it take to save up for the trip?

7. There are 450 students and 15 teachers in a school. The school hires 2 new teachers. To keep the student-to-teacher ratio the same, how many total students should attend the school?

8. Swimming goggles cost $84.36 for a case of 12. At this rate, how much will it cost to get new goggles for 17 members of a swim team?

9. Which of the following is true?

    a. $-205 \geq -106$
    b. $-205 > -106$
    c. $-205 \leq -106$
    d. $-205 < -106$

10. What value of x makes -4x=12 true?

    a. -48
    b. -3
    c. 3
    d. 16

11. Which group of numbers is in the solution set?

$$x - 6 \leq 5$$

    a.   6, 7, 8, 9
    b.   8, 10, 12, 14
    c.   9, 10, 11, 12
    d.   10, 12, 14, 16

Solve the following:

12. $\dfrac{2}{3} n - 6 = 22$

13. $m - 1.002 = 0.95$

14. $x + 7 \leq 5 + 7$

15. $w + -14 \geq -6 + -6$

16. A snowstorm drove the temperature down 3°C each hour. The thermometer read 8°C before the storm began. What did it read 4 hours later?
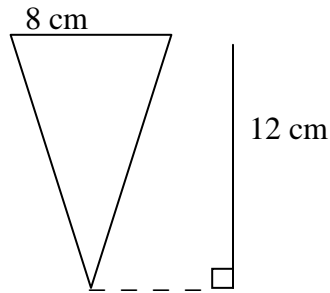
17. The length of one side of a rectangle is 30m. The perimeter of the rectangle is 80m. What is the width of the rectangle?

18. Ellen is making a pendent in the shape of a rectangle. One side of the rhombus is 6 cm and the other side is 10 cm. How much wire does she need to go around the rhombus?

    a.   16 cm
    b.   60 cm
    c.   32 cm
    d.   26 cm

19. What is the area of the triangle shown?

$$A = \frac{1}{2} \, bh$$

8 cm

12 cm

    a.   32 cm^2
    b.   40 cm^2
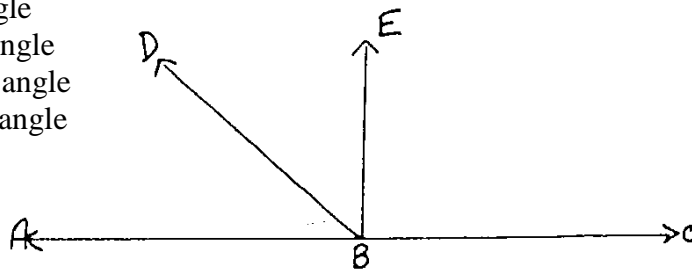   c.   48 cm^2
    d.   96 cm^2

20. Sam has a juice box with the following dimensions, 3" x 2" x 6". What is the volume? $V = LWH$
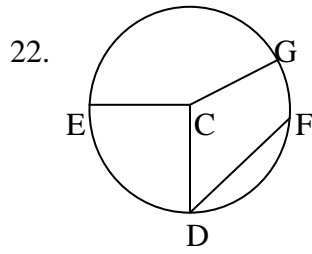
    a.   18 cubic inches
    b.   36 cubic inches
    c.   26 cubic inches
    d.   12 cubic inches

21. Use the figure at the right to answer the following:

    a.   name a right angle
    b.   name an acute angle
    c.   name an obtuse angle
    d.   name a straight angle

22.

Which of these line segments is a chord?

$\overline{EC}$ $\overline{CG}$ $\overline{CD}$ $\overline{DF}$
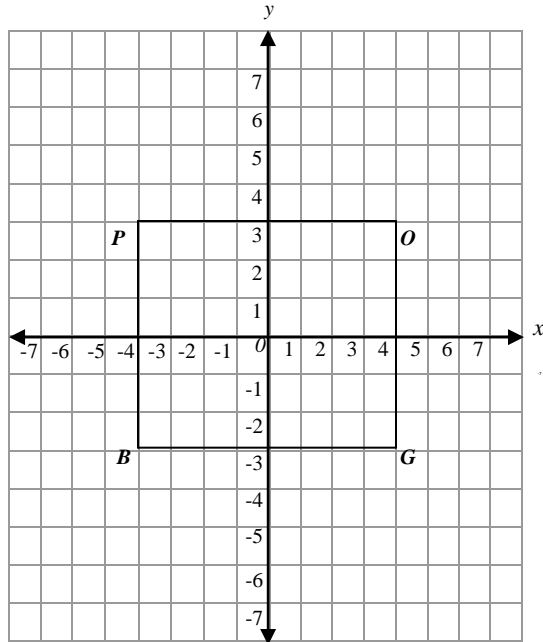
A   B   C   D

23. Pictured is a figure from the cover of Kreig's CD case.

Four more figures from Kreig's CD case are shown below. Which appears to be congruent to the figure above?

a.

b.

c.

d.

24.

Which line segment most likely connects points located at (-4, -3) and (4,3) on the coordinate grid above?

a. $\overline{OG}$
b. $\overline{GB}$
c. $\overline{BO}$
d. $\overline{BP}$

25.   63.89
     - 2.08

26. $18.5 + 0.25 + 0.25 =$

27.   437
     x 42

28. $1.5\overline{)84}$

29. $17\dfrac{2}{7} + 3\dfrac{1}{2} =$

30. Estimate $10.02 - $6.89 =

31. The fabric for play costumes costs $5.95 per yard. Patti needs $2\frac{7}{8}$ yards for one costume and $3\frac{5}{8}$ yards for another one. About how much will she spend on these costumes? Estimate the sum by first rounding to the nearest whole number.

32. $6 + (8-3) + 2 =$

33. $5 \times (4+6) - 3=$

34. $6 + 8 \times 2 \div 4=$

35. One of the world's largest dinosaurs was the *brontosaurus*, which weighed about 45 tons. The world's smallest dinosaur was the *compsognathus*, which weighed about 15 pounds.

Which of the equations below describes the difference in weight of the two dinosaurs?

1 ton = 2,000 pounds

a. $(45 \times 2,000) - 15 = d$

b. $(15 \times 2,000) - 15 = d$
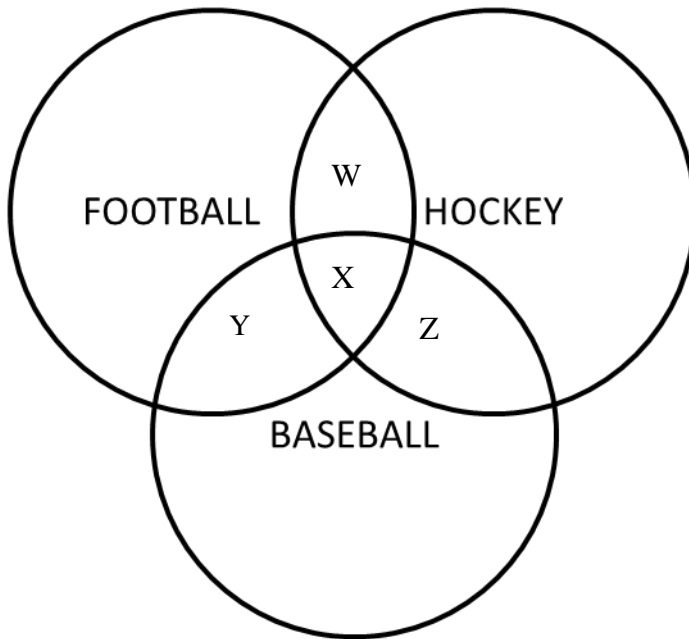
c. $\dfrac{2,000}{15} + 45 = d$

d. $15 \times 2,000 = d$

36. What are the next two numbers in the pattern?

3, 6, 7, 10, 11, 14 . . .

a.   15, 18
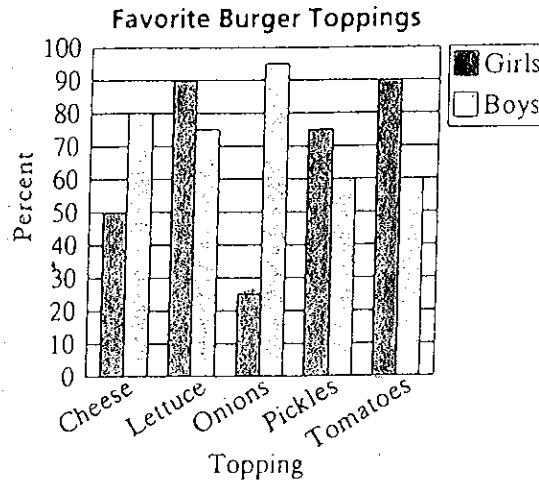b.   17, 20
c.   17, 18
d.   15, 16

37.

Betty's favorite sports are Hockey and Football. In what section do her favorite sports intersect?

a.   W
b.   X
c.   Y
d.   Z

Use the graph for problems 38 and 39.

38. Which topping is liked by about 75% of the girls?

Favorite Burger Toppings

39. Suppose 380 boys are surveyed. About how many boys would you expect to choose tomatoes as their favorite burger topping?

40. There are six chemical elements called "noble gases." Suppose you write the names of all 112 elements on cards and select a card without looking. What is the probability of not picking a noble gas? Find the probability as a fraction, a decimal, and a percent.

41. A bag contains 5 oranges, 5 golden apples, and 10 red apples. What is the probability that a piece of fruit selected at random is an apple?

42. This stem-and-leaf plot shows the high temperatures in Alexandria for two weeks.

High Temperatures in Alexandria (°F)

Stem	Leaf
5	0 7 7 9
6	4 8 8 9
7	1 3 6
8	0 0 2

Key
9|2 means 92

Which of the following is a *true* conclusion based on the data in the stem-and-leaf plot?

a.   The range of temperature was 22°F.
b.   The temperature was 80°F for 3 days.
c.   The temperature was at least 57°F every day.
d.   The temperature was greater than 70°F exactly 6 times.

43. The number of sandwiches sold at four stores from Week 1 through Week 5 is shown on this table.

Sandwiches Sold

	Store P	Store Q	Store R	Store S
Week 1	100	150	90	92
Week 2	103	147	89	107
Week 3	102	143	88	95
Week 4	110	140	90	85
Week 5	115	138	87	110

Based only on the data in the table, which store is *most* likely to increase its sales of sandwiches in Week 6?

a.   Store P
b.   Store Q
c.   Store R
d.   Store S