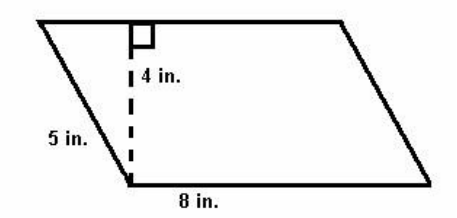
Keystone National Middle School Math Level 7 Placement Exam

1) Erica bought a car for $24,000. She had to add Pennsylvania's sales tax of 6%. The total price of the car is closest to? a) $25,500 b) $26,000 c) $25,000 d) $24,000	2) Convert the following fraction to a decimal $\frac{15}{316}$ a) 2.5472 b) 3.156 c) 3.9375 d) 4.238
3) Find the area of the parallelogram Hint: A = b x h  a) 18 in^2 b) 20 in^2 c) 32 in^2 d) 40 in^2	4) How many ounces are in 3.5 pounds? Hint: 16 ounces = 1 pound a) 4.6 ounces b) 19.5 ounces c) 50 ounces d) 56 ounces

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5) 200 students at a local college campus were asked to choose between chocolate and vanilla ice cream. 50 of the 200 students chose chocolate. If the college has a total of 1000 students, approximately how many students would prefer chocolate ice cream?

a) 1000
b) 250
c) 50
d) 500

6) A cereal box has the following dimensions: height of 12 inches and width of 2 inches. If the volume of the box is 192 cubic inches, find the length of the box. Hint: V = lwh

a) 10 inches
b) 8 inches
c) 14 inches
d) 6 inches

7) Add to following fractions

$$4\frac{2}{3} + 6\frac{3}{4}$$

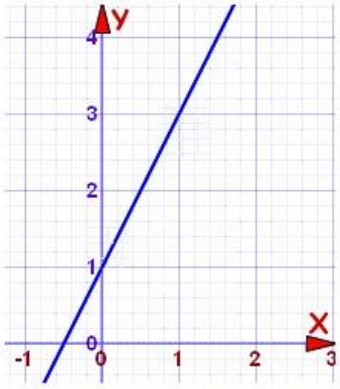
a) $10\frac{5}{12}$

b) $11\frac{5}{12}$

c) $10\frac{5}{7}$

d) $11\frac{5}{7}$

8) What is the equation of the line shown in the following graph?



a) y = 2x + 1
b) y = -2x + 1
c) y = 2x – 1
d) y = -2x – 1

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9) Out of the 15 friends that I have, the proportion of blonds to brunettes is 6 to 9. Which of the following statements is false?

a) The ratio of the number of friends to brunettes is 15 to 9
b) The ratio of brunettes to blonds is 6 to 9
c) The ratio of blonds to the number of friends is 6 to 15
d) The ratio of brunettes to the number of friends is 9:15

10) Given the function

$y = 2x - 3$

Complete the table

x	y
-4	
0	
½	

a) 5, 3, -2
b) -11, -3, -2
c) -5, -3, 1
d) -11, 3, 4

11) The trail is $\frac{9}{10}$ of a mile long. It is marked by 6 evenly spaced markers. How far apart are the markers placed? Simplify your answer

a) $\frac{3}{4}$ miles
b) $\frac{1}{18}$ miles
c) $\frac{3}{20}$ miles
d) $\frac{9}{60}$ miles

12) A bag contains 3 red marbles, 4 black marbles, and 5 yellow marbles. What are the chances of picking a marble that is not black?

a) $\frac{2}{3}$
b) $\frac{1}{4}$
c) $\frac{1}{2}$
d) $\frac{1}{3}$

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13) Simplify $3 + 4(8-5) \div 6^3$ a) 6.5 b) 29 c) 11 d) 34.16	14) Solve $7 + 5\,[(3+2)^2 - (2^3+1)]$ a) 22 b) 36 c) 97 d) 87
15) What are the next two numbers in the pattern 2, 7, 22, 67, ___, ___ a) 95, 120 b) 91, 131 c) 202, 607 d) 150, 2918	16) Convert 0.64 to a fraction a) $\frac{1}{5}$ b) $\frac{1}{32}$ c) $\frac{1}{64}$ d) $\frac{16}{25}$

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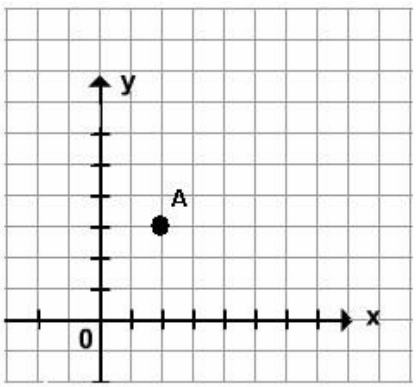
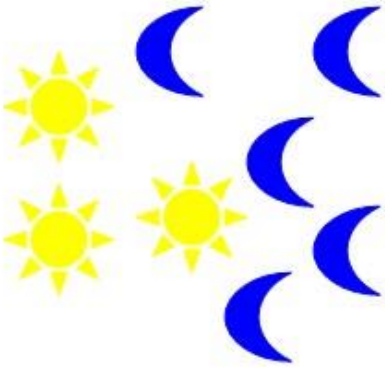
17) Identify the coordinates of point A



a) (2,3)
b) (3,2)
c) (-2,3)
d) (-3,-2)

18) What is the ratio of yellow suns to blue moons?



a) 3:5
b) 3:8
c) 5:3
d) 5:8

19) Solve for X

$X \times 3\frac{3}{10} = 2\frac{2}{5}$

a) $\frac{1}{4}$
b) $\frac{1}{2}$
c) $\frac{6}{11}$
d) $\frac{8}{11}$

20) Solve for x

$3x - 7 = 14$

a) $\frac{7}{-3}$
b) $\frac{7}{3}$
c) -7
d) 7

21) Joe can type 60 words per minute. How long will it take him to type a 4800 word essay?

a) 2 hours 10 minutes
b) 1 hour 30 minutes
c) 1 hour 20 minutes
d) 2 hours 20 minutes

22) Dan scored $\frac{1}{4}$ of the points at last night's basketball game. What percentage of the total points did he score?

a) 14%
b) 20%
c) 25%
d) 40%

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23) Solve
$7+(6x5^2+3)$

a) 70
b) 85
c) 91
d) 160

24) Which of the following is a translation of "six less than three times a number x"

a) 3x-6
b) 6x-3
c) 6-3x
d) 3-6x

25) Compare the quantities

$\frac{2}{3} \times \frac{1}{4}$ and $\frac{1}{3} \times \frac{3}{4}$

a) <
b) >
c) =
d) none of the above

26) How many seconds are in 2 hours and 2 minutes?

a) 240
b) 7,320
c) 8,400
d) 2,400

27) Evaluate $\frac{3x-4y}{2x}$ if x = 4 and y = -2

a) 2
b) $\frac{1}{2}$
c) $\frac{2}{5}$
d) $\frac{5}{2}$

28) Reduce answer to the lowest terms

$\frac{2}{5} \times \frac{2}{7} \times \frac{5}{8}$

a) $\frac{1}{2}$
b) $\frac{2}{5}$
c) $\frac{1}{14}$
d) $\frac{2}{28}$

29) Solve
$(8 – (+2)) \times (7+(-2)) =$

a) 30
b) 50
c) 70
d) 90

30) What is the mathematical expression for "the $100 earned was split between all the people and each got $12.50"?

a) 100 – p = 12.50
b) 100/p = 12.50
c) 100p = 12.50
d) 100p + 12.50

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31) Use the table to find the number of students who scored in the 70's

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

a) 5
b) 7
c) 6
d) 4

32) Sue has twice as much money as Chris. Together they have nine dollars. Let x equal the amount of money that Chris has. Which of the following equations can be used to find the amount of money that Sue and Chris each have?

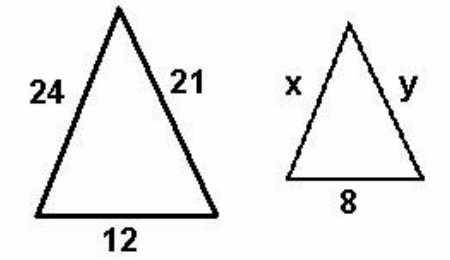
a) $x + 2x = 9$
b) $2(x+2) = 9$
c) $2x = 9$
d) $2x - x = 9$

33) Frank has 224 board games. He bought $\frac{3}{4}$ of his games on the Internet.

Of the games he bought on the Internet, $\frac{1}{6}$ are card games. How many card games did he buy on the Internet?

a) 14 games
b) 30 games
c) 28 games
d) 42 games

34) Find the value of *x* and *y*



a) $x=4$ and $y=5$
b) $x=8$ and $y=3$
c) $x=16$ and $y=14$
d) $x=14$ and $y=7$

35) You select a letter at random from the following letters

A B C D E

Find the theoretical probability of selecting a vowel?

a) $\frac{1}{2}$
b) $\frac{2}{5}$
c) $\frac{3}{4}$
d) $\frac{4}{7}$

36) The chart below shows the response from 20 students as to how many times a day he or she drinks from the water fountain. What is the median?

0	1	1	5	2
10	2	3	5	1
5	2	2	3	4
3	5	5	2	2

a) 2
b) 2.5
c) 3
d) 3.5

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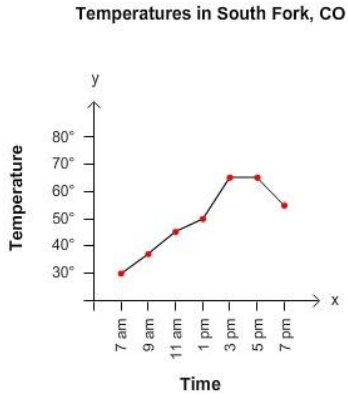
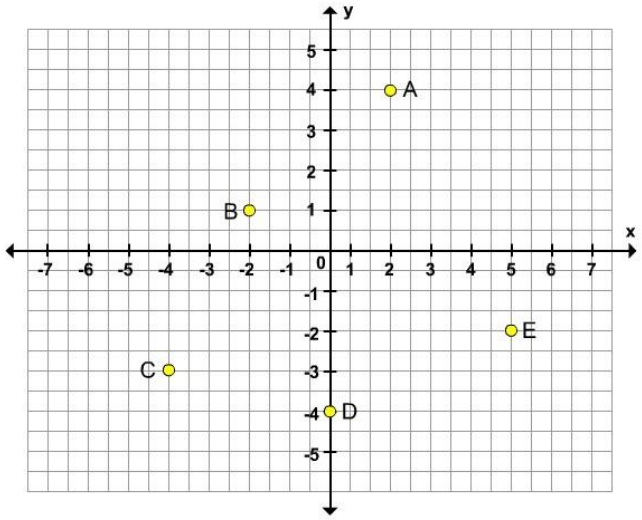
37) Use the line graph to determine during which 2 hour period did the temperature not change



a) the temperature did not change between 7 am and 9 am
b) the temperature did not change between 11 am and 1 pm
c) the temperature did not change between 5 pm and 7 pm
d) the temperature did not change between 3 pm and 5 pm

38) Name the coordinates of point A and B on the graph below



a) (2, 4) and (-2, 1)
b) (-2, -4) and (-2, -1)
c) (-2, 4) and (2, -1)
d) (2, -4) and (2, 1)

39) The length of a track around a field is $\frac{1}{4}$ miles. You jog $3\frac{1}{2}$ times around the track. How far do you jog?

a) $\frac{1}{2}$ miles
b) $\frac{2}{5}$ miles
c) $\frac{7}{8}$ miles
d) 1 mile

40) You received the following scores in math class:

100 89 83 90 83

Should you describe your tests using the mean, the median or the mode to show how well you are doing in math?

a) mean
b) mode
c) median
d) none of the above

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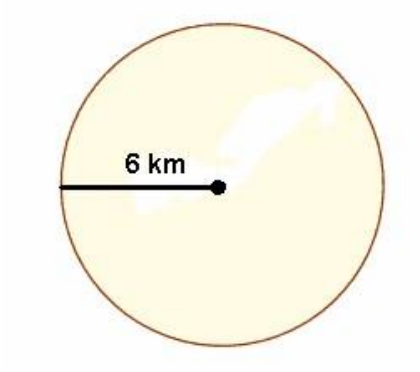
41) Find the circumference of the circle below

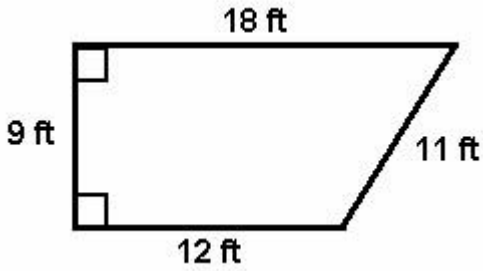
Hint: Circumference = π × diameter



a) 12.2 km
b) 37.7 km
c) 42.1 km
d) 113.7 km

42) Find the area of this trapezoid

Hint: Area = $\frac{1}{2} h(b_1 + b_2)$



a) 50 ft^2
b) 108 ft^2
c) 135 ft^2
d) 162 ft^2

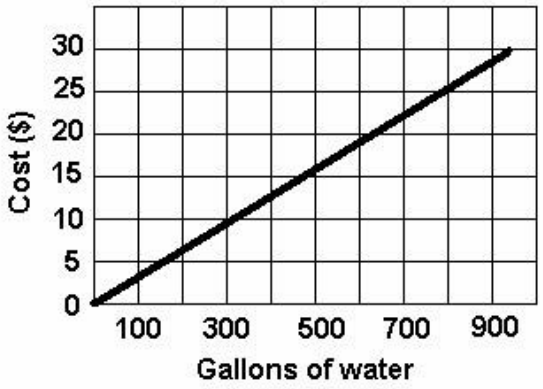
43) You attempt 16 free throws in a basketball game. Your results are shown below.

0 = miss 1 = make							
0	0	1	1	1	0	1	0
0	1	0	1	1	0	0	1

What is the experimental probability of making a free throw?

a) $\frac{1}{4}$
b) $\frac{1}{2}$
c) $\frac{2}{3}$
d) $\frac{3}{4}$

44) What is the estimated cost of 600 gallons of water?



a) $10
b) $15
c) $20
d) $25

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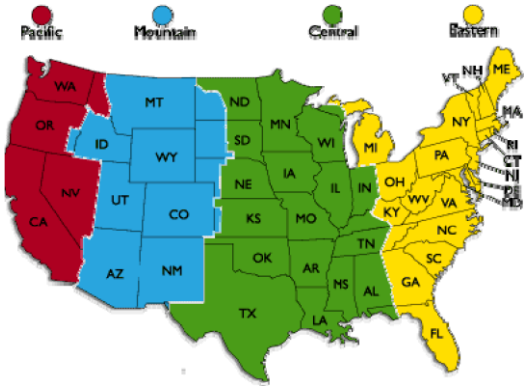
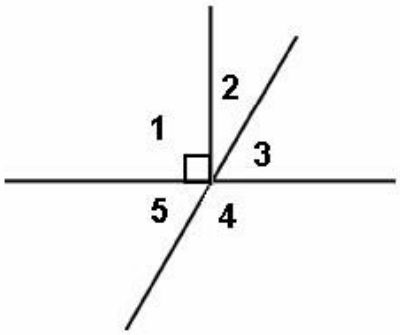
45) The continental United States has four time zones. Consider time changes as positive when going east and negative when going west. Find the time in the indicated time zone

6:00 A.M.: 2 time zones east



a) 4:00 A.M
b) 7:00 A.M.
c) 8:00 A.M.
d) 9:00 A.M.

46) Which angles are complementary?

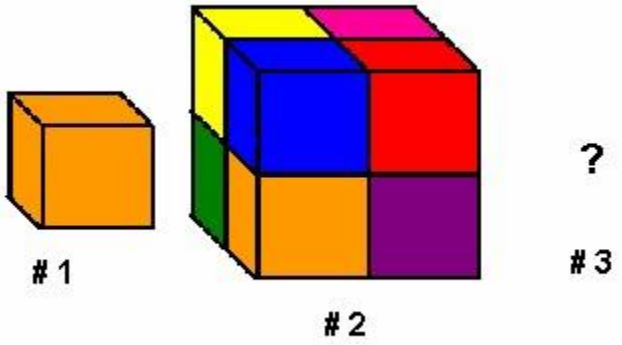


a) 1 and 2
b) 3 and 4
c) 4 and 5
d) 2 and 3

47) The length of the wing of a model airplane is 3 inches. If the scale of the model plane to the actual plane is 1 inch = 25 feet, what is the length of the actual wing?

a) 50
b) 75
c) 100
d) 125

48) Using the pattern of two prisms below. How many cubes will there be in a third prism?



a) 12
b) 24
c) 27
d) 32

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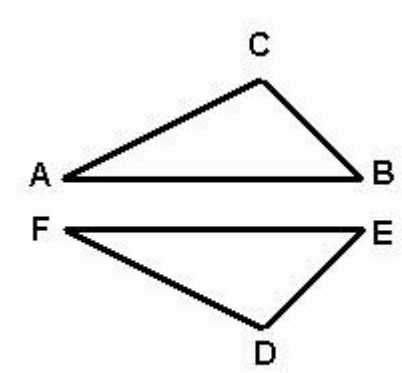
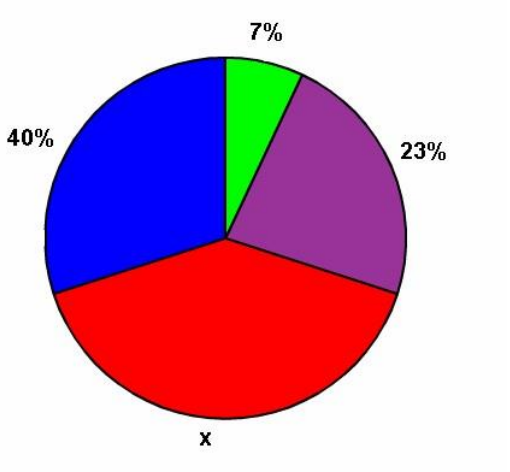
49) Complete the congruence statement

ΔABC ≅ _____



a) ΔFED
b) ΔFDE
c) ΔDFE
d) ΔFE

50) Using the given chart, find the percentage of x



a) 30%
b) 20%
c) 110%
d) 29%

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