Clark County School District
K-12 Mathematics

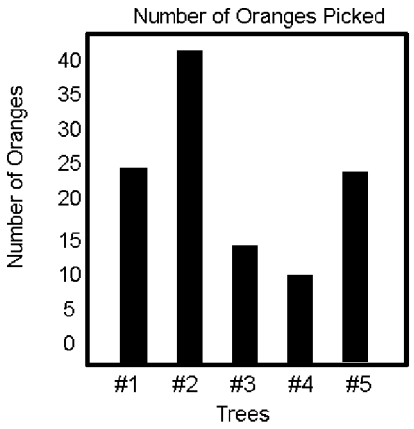
High School Practice Proficiency Examination Spring 2007

Curriculum and Professional Development Division
Southern Nevada Regional Professional Development Program

Spring 2007

Practice Proficiency

1. The number of oranges picked from five trees is shown in the bar graph below.



What is the mean number of oranges picked from Tree 1, Tree 2, and Tree 4?

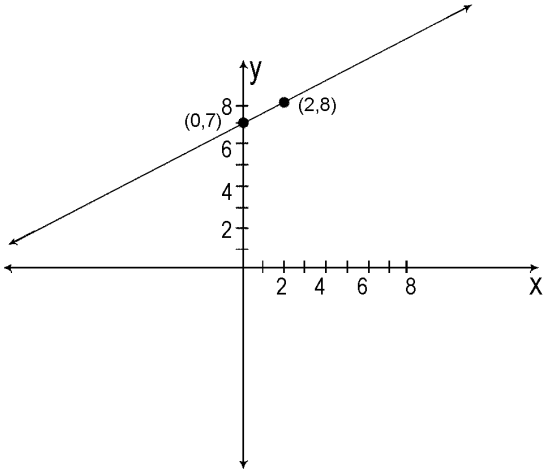
a) 75

b) 40

c) 25

d) 15

2. The graphic below is the graph of a line.



What is the slope of the line?

a) -2

b) $-\frac{1}{2}$

c) $\frac{1}{2}$

d) 2

3. At Glenn High School, 447 girls and 498 boys are enrolled in band, 300 girls and 298 boys are enrolled in art, and 432 girls and 514 boys are enrolled in choir, respectively. Which of the following matrices represents student enrollment in each class?

a) $\begin{bmatrix} 498 & 298 & 432 \\ 300 & 447 & 514 \end{bmatrix}$

b) $\begin{bmatrix} 447 & 432 & 300 \\ 498 & 298 & 514 \end{bmatrix}$

c) $\begin{bmatrix} 447 & 300 & 514 \\ 498 & 298 & 432 \end{bmatrix}$

d) $\begin{bmatrix} 447 & 300 & 432 \\ 498 & 298 & 514 \end{bmatrix}$

4. The original price of a T.V. was \$159. The store marked everything up 10%. Then the T.V. went on sale for 10% off. What is the current price?

a) \$125.19

b) \$159.00

c) \$157.41

d) \$192.39

5. Johsua has 3 green shirts, 4 blue shirts, 2 pairs of blue pants, a pair of khaki pants, one pair of tennis shoes, and one pair of brown shoes. If Joshua randomly chooses one shirt, one pair of pants, and one pair of shoes, what is the probability he randomly chooses a green shirt, blue pants, and tennis shoes?

a) $\frac{1}{12}$

b) $\frac{1}{7}$

c) $\frac{1}{6}$

d) $\frac{1}{3}$

6. Jorge took $\frac{2}{3}$ of an hour to walk 2 miles to school. What is his average rate of speed in **miles per minute**?

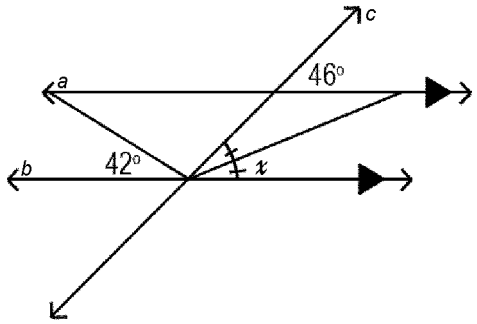
a) $\frac{1}{20}$

b) $\frac{1}{40}$

c) 20

d) 40

7. In the diagram below, line a is parallel to line b.



What is the value of x?

a) 21°

b) 23°

c) 67°

d) 69°

8. A garden is in the shape of a square. Each side is 12 meters in length. A fence post must be placed at each corner, with additional posts placed 2 meters apart on each side. How many posts will be required to completely fence in the garden?

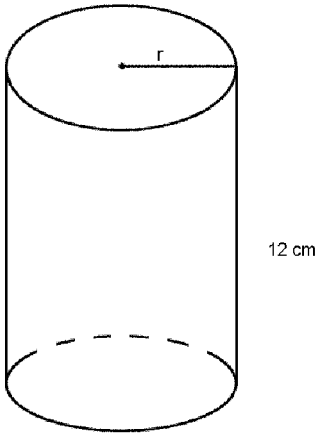
a) 20

b) 22

c) 24

d) 28

9. The diagram below shows a cylinder with a height of 12 cm and a volume of $108\pi\,\text{cm}^3$.



What is the circumference of the base of the cylinder in centimeters?

a) 3π

b) 6π

c) 9π

d) 12π

10. Use the stem-and-leaf plot shown below.

1	0 0 5 6
2	3 5
3	9
4	0 7 9

2|3 = 23 minutes

What is the difference between the median and the mode of the data in the stem-and-leaf plot?

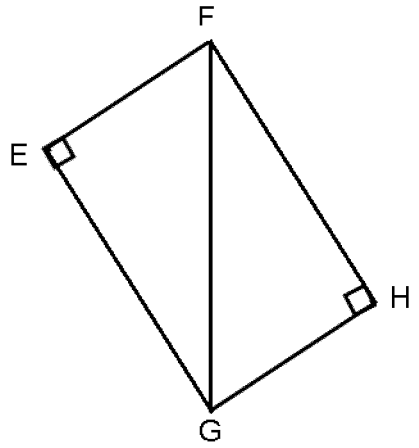
a) 3 minutes

b) 14 minutes

c) 17 minutes

d) 34 minutes

11. In the diagram below, $\triangle$FEG is congruent to $\triangle$GHF and the measure of $\angle$HFG is 25 degrees.



In degrees, what is the measure of $\angle$EFG?

a) 25

b) 50

c) 65

d) 90

12. Jane has 20% of the number of items Sara has. Sara has 60% of the number of items Bill has. If Bill has 100 items, how many does Jane have?

a) 12

b) 40

c) 400

d) 1200

13. What number would be next in the sequence -12, -2, 8, ...?

a) 10

b) 12

c) 14

d) 18

14. A line is represented by the equation $y = 3x + 5$. What would be the slope of a line parallel to this line?

a) $-\frac{1}{3}$

b) $-\frac{1}{5}$

c) 3

d) 5

15. Starr purchased a dress that cost \$30.00. The sales tax rate was 5%. What was Starr's total bill for the dress?

a) \$30.05

b) \$30.50

c) \$31.50

d) \$35.00

16. What is the next number in the sequence 1, 4, 9, 16, 25, ...?

a) 27

b) 28

c) 34

d) 36

17. A slide's ladder is perpendicular to the ground and 5 meters tall. The slide forms a 30° angle with the ground. What is the length of the slide in meters?

a) 5

b) $5\sqrt{3}$

c) 10

d) 15

18. Sally's doctor prescribed a liquid cough medicine for her cough. Which is the most appropriate unit of dosage?

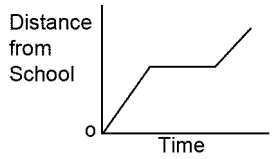
a) liter

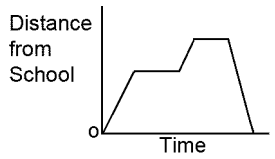
b) milliliter

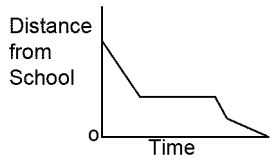
c) gram

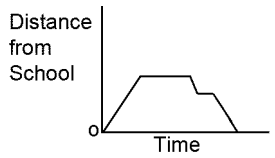
d) centigram

19. Coach Sanchez takes his team to an away game. They play their game before getting back on the bus for their return trip. They stop on their way back to the school for a short time to eat dinner. Which graph represents the journey of the team that afternoon?

a) 

b) 

c) 

d) 

20. Lisa is given a data set containing twenty-five unique values ranging from 5 to 50. If the largest value is increased by 100, how will the median be effected?

a) No Change

b) Increases by 50

c) Increases by 4

d) Doubles

21. Raul needs to construct a fence around his square yard. One side of the yard is 13 feet long. How much fencing, in feet, will he have to buy?

a) 26

b) 39

c) 52

d) 169

22. Which expression is equivalent to $-3(2x^2 - 5)$?

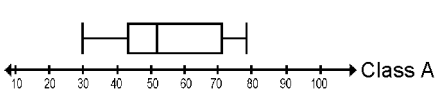
a) $-6x^2$

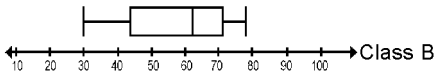
b) $6x^2$

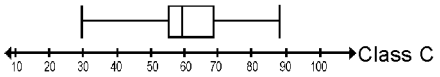
c) $-6x^2 + 15$

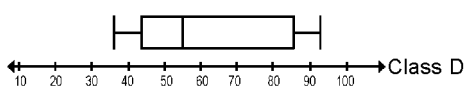
d) $6x^2 + 15$

23. Four math classes took a test on Friday. The results of the tests for each class are graphed below. Which class had the highest median score?

a) 

b) 

c) 

d) 

24. In order to sew a new denim jacket, Stacy needs 3 yards of fabric remnants. So far, Stacy has collected $\frac{1}{2}$ yard, $\frac{3}{4}$ yard, and $\frac{2}{3}$ yard of fabric pieces. How many more yards of fabric does Stacy need?

a) $1\frac{1}{12}$

b) $1\frac{1}{3}$

c) $1\frac{2}{3}$

d) $1\frac{11}{12}$

25. George pays a \$10 per month flat fee for long distance plus 4 cents per minute for each long distance call made on his home phone. Which equation represents his total monthly cost, in dollars, for long distance?
(C=cost and T=time)

a) $C = .04T + 10$

b) $C = 4T + 10$

c) $C = 10T + .04$

d) $C = 10T + 4$

26. A recipe calls for $\frac{1}{4}$ cup of white sugar and $\frac{1}{3}$ cup of brown sugar. The recipe needs to be tripled. Which equation represents the total (T) amount of sugar for the new recipe?

a) $T = 3(\frac{1}{4} + \frac{1}{3})$

b) $T = 3(\frac{1}{4} \times \frac{1}{3})$

c) $T = 3(\frac{1}{4}) \times 3(\frac{1}{3})$

d) $T = (\frac{1}{4} + \frac{1}{3})^3$

27. What is the value of x in the equation $2x - 10 = 4$?

a) -3

b) 7

c) 9

d) 12

28. Jae and Sonia are selling magazines. Sonia sold five more than double the amount Jae sold. Jae sold 62 magazines in all. How many did Sonia sell?

a) 119

b) 124

c) 129

d) 134

29. A fair six-sided die is rolled one time. What is the probability that it will land on an even number?

a) $\frac{1}{6}$

b) $\frac{1}{4}$

c) $\frac{1}{3}$

d) $\frac{1}{2}$

30. The probability of Jose winning the election is $\frac{5}{12}$. What are the odds **against** him winning the election?

a) 5 to 7

b) 5 to 12

c) 7 to 5

d) 7 to 12

31. Which line is perpendicular to a line with a slope of $\frac{1}{3}$?

a) $y = 3x + 4$

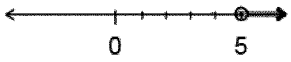
b) $y = \frac{1}{3}x + 3$

c) $y = -\frac{1}{3}x + 2$

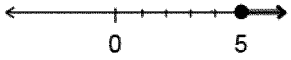
d) $y = -3x + 1$

32. Which graph represents all possible solutions to $x + 7 \leq 12$?

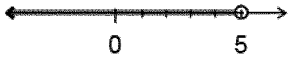
a)



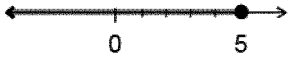
b)



c)



d)



33. A car dealership currently has 24 cars, 12 SUV's, and 18 trucks on the lot. Two-thirds of these vehicles will be sold by the end of the month. Which matrix shows how many vehicles will be left on the lot?

a) [8 4 6]

b) [16 8 12]

c) [32 16 24]

d) [40 20 30]

34. A sandbox is twice as long as it is wide. Its area is 32 sq ft. What is the perimeter of the sandbox in feet?

a) 4

b) 8

c) 12

d) 24

35. Four students each play a different sport. Andre does not play a sport involving water. Patricia plays a sport with a net. Howard competes individually. Kayley plays tennis. Which of the following sports does Andre play?

a) Baseball

b) Swimming

c) Tennis

d) Volleyball

36. Two fair dice are rolled together. What is the probability that the sum of the dice is less than 5?

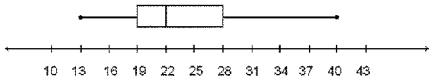
a) $\frac{1}{6}$

b) $\frac{5}{13}$

c) $\frac{8}{13}$

d) $\frac{5}{6}$

37. The following box-and-whisker plot represents a set of data.



What is the interquartile range of this data?

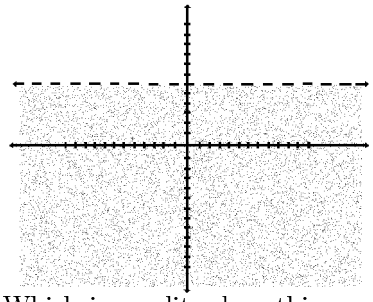
a) 3

b) 9

c) 22

d) 26

38. The coordinate plane below shows the graph of an inequaltiy.



Which inequality does this graph represent?

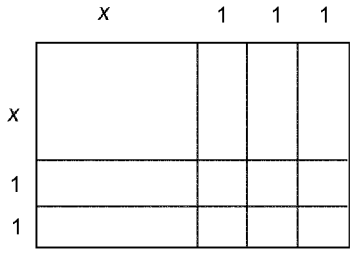
a) $x < 6$

b) $x \leq 6$

c) $y < 6$

d) $y \leq 6$

39. The following diagram is broken into the dimensions shown below.



Which expression represents the area of the configuration?

a) $2x + 5$

b) $x^2 + 6$

c) $(x + 2)(x + 3)$

d) $(2x)(3x)$

40. Use the data below.

2, 10, 14, 14, 14, 15, 15, 16, 17, 18, 22

Which is an outlier of this data?

a) 2

b) 14

c) 15

d) 20

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Answer List

1. c	2. c	3. d
4. c	5. b	6. a
7. b	8. c	9. b
10. b	11. c	12. a
13. d	14. c	15. c
16. d	17. c	18. b
19. d	20. a	21. c
22. c	23. b	24. a
25. a	26. a	27. b
28. c	29. d	30. c
31. d	32. d	33. a
34. d	35. a	36. a
37. b	38. c	39. c
40. a		

Catalog List

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.
13.	14.	15.
16.	17.	18.
19.	20.	21.
22.	23.	24.
25.	26.	27.
28.	29.	30.
31.	32.	33.
34.	35.	36.
37.	38.	39.
40.		