



Full Name:

Date: ____ ____ ____ ____ 20 ____ ____ (month/day/year)

Teacher Name:

Amount of Time to Complete (to be filled in by your teacher): ____ ____ mins.

Instructions

The test is comprised of 22 questions.

*Please fill in the bubble for your chosen answer, A, B, etc. on the answer sheet or write **clearly** in the space provided in the test booklet where indicated.*

Be sure to use blue or black ball-point pens or a pencil (no felt tips or gel pens) and if you fill in an incorrect bubble, simply cross it out and fill in the correct bubble.

For each question there is a confidence scale from 1 to 7. Please fill in the bubble on the answer sheet that relates to the number to indicate how confident you were in answering each question.

You are not allowed a calculator and you have 45 minutes to complete the test.

Please try your best. This test is designed by the University of Massachusetts Dartmouth to help us assess your mathematical knowledge.

Thank you.

Please do not write below this line.

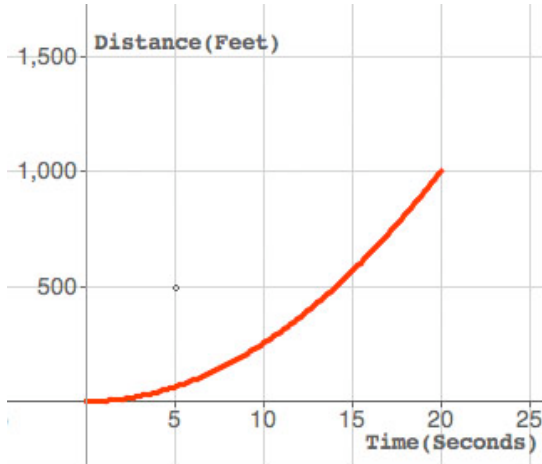
Place ID label below:

Item #3a

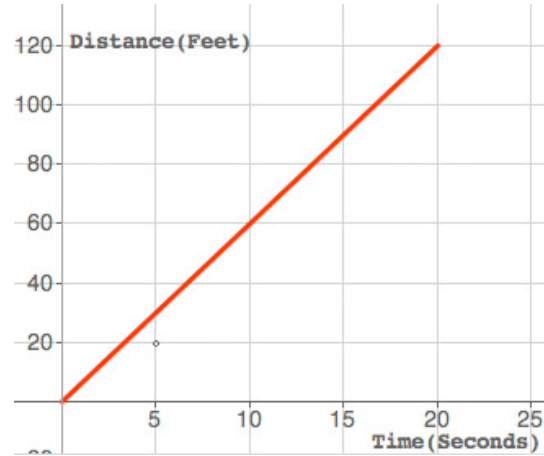
A car's speed from a standing start accelerates at the rate of 5 ft/sec for each second over a 20 second interval.

Which of the following graphs represents the car's distance traveled over this 20-second interval.

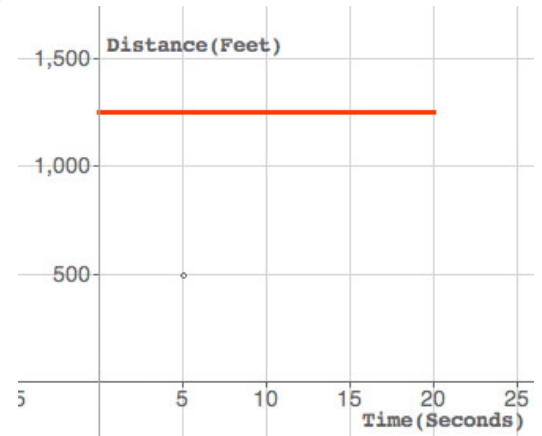
A.



B.



C.



D.

None of these represent the car's distance.

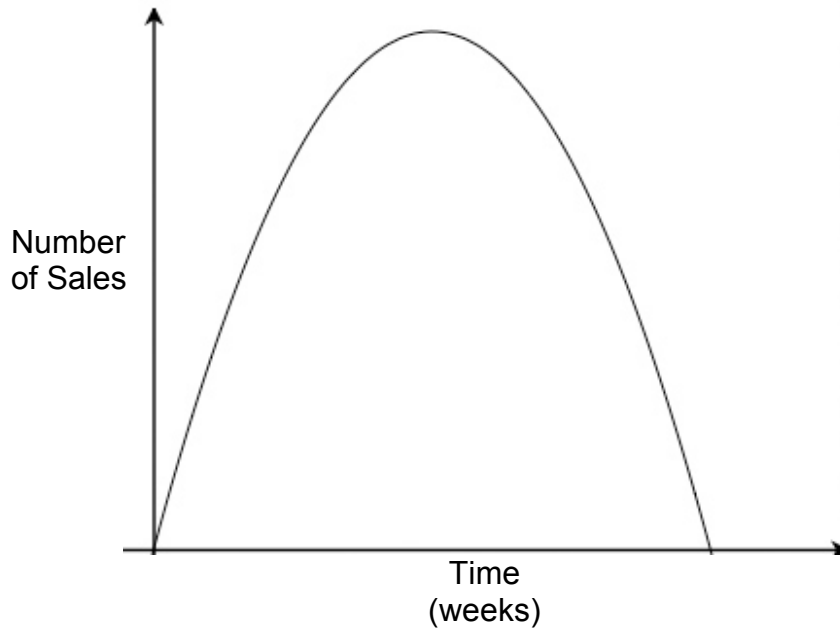
Item #3b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

- | | | | | | | |
|---------------|---|---|---------|---|---|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Not confident | | | Neutral | | | Very confident |

Item #4a

The sales record for a recent hit CD at Tony's Music Store is shown on the graph below.



Which statement best describes the sales of this CD?

- A. Sales rapidly increased, reached a peak, and then gradually decreased.
- B. Sales gradually increased, reached a peak, and then leveled off.
- C. Sales rapidly increased, reached a peak, and then rapidly decreased.
- D. Sales remained constant throughout the time period.

Item #4b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1 2 3 4 5 6 7
Not confident Neutral Very confident

Item #5a

From the ground, an Ant crawls along a flower stem. The graph below displays its height on the flower (above the ground) for 7 seconds.



At what time does the ant change direction on the flower stem?

- A. 2 seconds
- B. 4 seconds
- C. 6 seconds
- D. 2 and 4 seconds

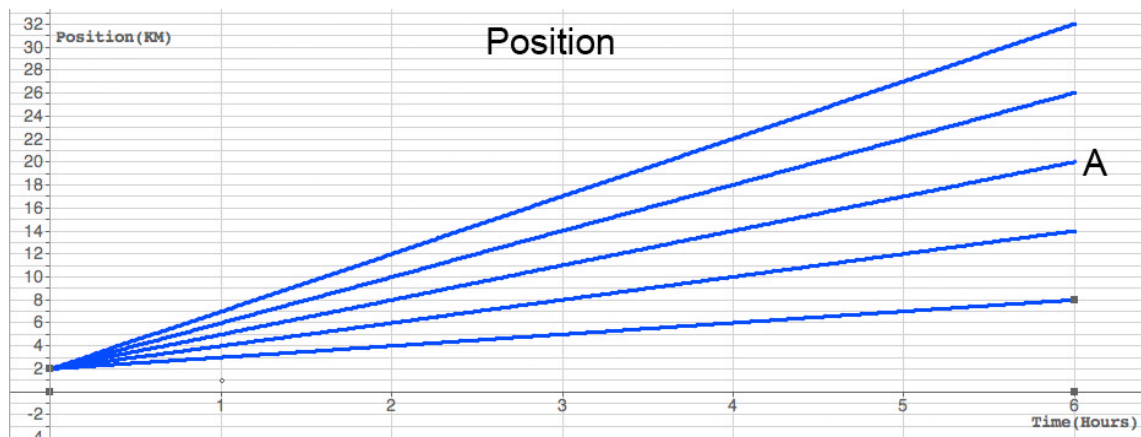
Item #5b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1 2 3 4 5 6 7
Not confident Neutral Very confident

Item #6a

The position graph below shows a race that took place among five people. Be careful regarding the scale on the vertical axis.



What is the position formula for A?

- A. $Y=X+20$
- B. $Y=3X+2$
- C. $Y=20X$
- D. $Y=3X$

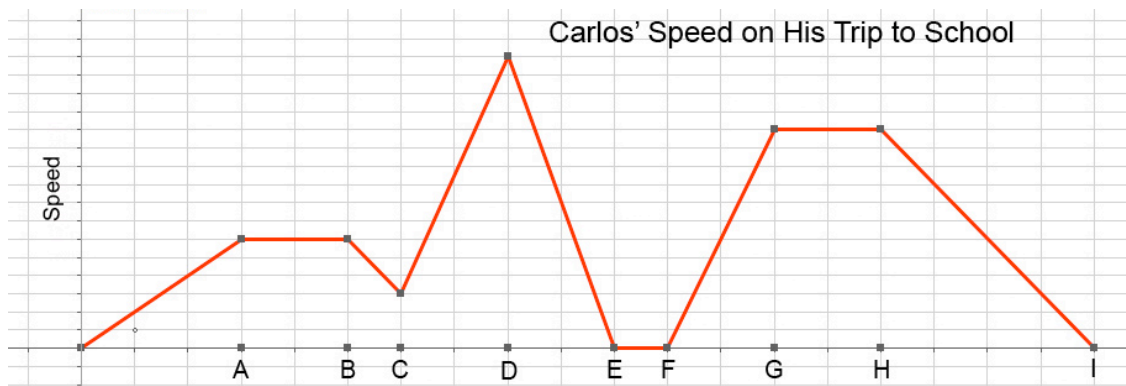
Item #6b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1 2 3 4 5 6 7
Not confident Neutral Very confident

Item #7a

The graph below shows Carlos' speed on his trip to school



Based on the graph, when is Carlos' speed decreasing most rapidly?

- A. For times between B and C
- B. For times between D and E
- C. For times between E and F
- D. For times between H and I

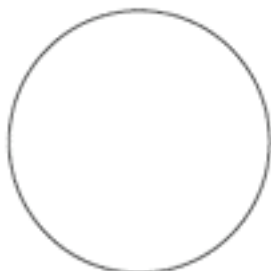
Item #7b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

- 1 2 3 4 5 6 7
- Not confident Neutral Very confident

Item #8a

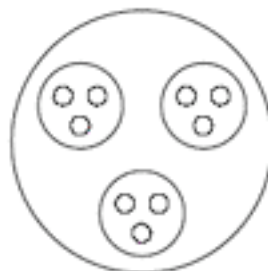
An artist creates a design by drawing circles in steps, as shown below.



Step 1



Step 2



Step 3

The table below shows a pattern of the total number of circles formed at each step.

Pattern of Circles

Step	1	2	3	4	5
Total Number of Circles	1	4	13		

If the pattern shown in the table continues, what will be the total number of circles formed at step 5?

- A. 52
- B. 117
- C. 121
- D. 283

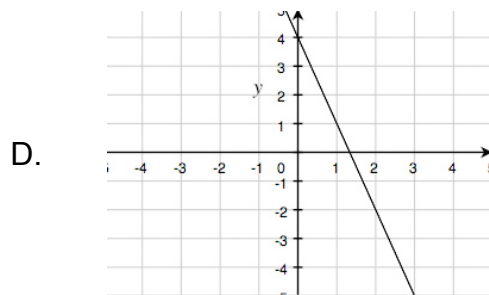
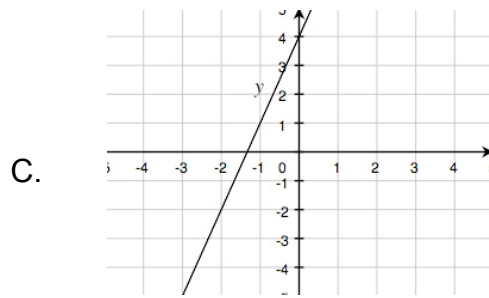
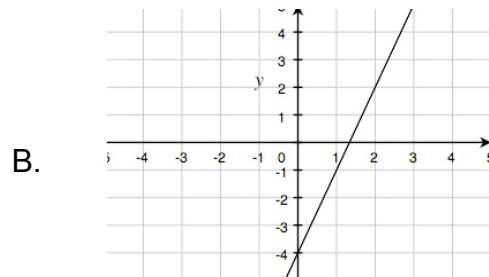
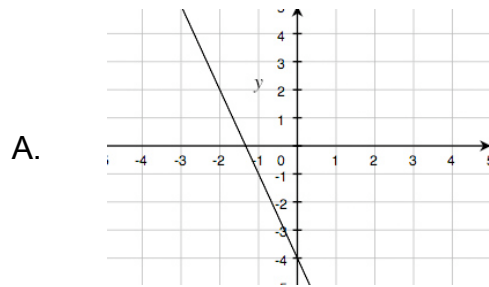
Item #8b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1 2 3 4 5 6 7
Not confident Neutral Very confident

Item #11a

Which graph below best represents $y = -3x + 4$?



Item #11b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1

2

3

4

5

6

7

Not confident

Neutral

Very confident

Item #12a

Two linear equations are given below.

$$2x - 3y = 12$$

$$-4x + 6y = 6$$

Which of the following statements about the equations is true?

- A. They represent the same line.
- B. They represent lines with negative slopes.
- C. They represent parallel lines.
- D. They represent perpendicular lines.

Item #12b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1

2

3

4

5

6

7

Not confident

Neutral

Very confident

Item #13a

The following is a short answer question. Roberta's long-distance calling plan costs a fixed fee of \$5 per month, plus 7 cents per minute. Roberta has budgeted just \$19 per month to spend on long-distance calls. What is the maximum number of minutes that Roberta can use on long-distance calls each month without exceeding her budget? Please show all work.

Item #13b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1	2	3	4	5	6	7
Not confident			Neutral			Very confident

Item #14a

What is the y-intercept of the line represented by the equation below?

$$4x - 3y = 12$$

- A. -12
- B. -4
- C. 4
- D. 12

Item #14b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1

2

3

4

5

6

7

Not confident

Neutral

Very confident

Item #15a

Which of the following best describes the slope of a line on the coordinate plane that is parallel to the y-axis?

- A. Zero
- B. Positive
- C. Negative
- D. Undefined

Item #15b

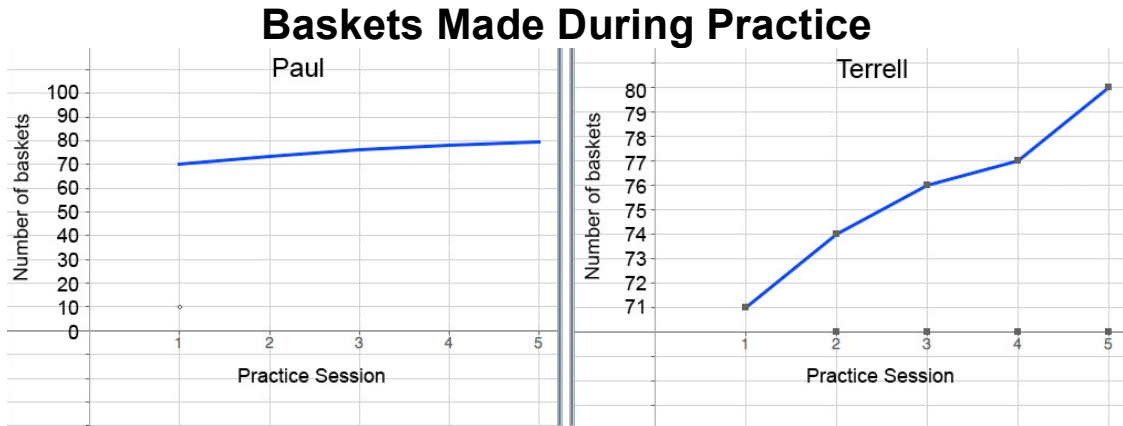
Below, please circle the number that corresponds to how confident you are in answering this question correctly.

- | | | | | | | |
|---------------|---|---|---------|---|---|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Not confident | | | Neutral | | | Very confident |

Item #18a

(Use the graphs below to answer this question.)

The graphs show numbers of baskets made by Paul and Terrell during 5 basketball practice sessions. They each take 100 practice shots in each practice session. According to the information in these graphs, who was more successful at making baskets?



- A. Paul did better.
- B. Terrell did better.
- C. Their scores are the same.
- D. More information is needed to make a decision.

Item #18b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

- 1 2 3 4 5 6 7
- Not confident Neutral Very confident

Item #19a

Mr. Chrostowski is choosing one of the billing plans shown below for his cellular phone. He estimates that he will use the phone less than 50 minutes per month. (Use the chart below to answer this question.)

Billing Plans for Cellular Phone			
	Basic charge per month	Number of free minutes per month	Charge per minute
Plan 1	\$16	0	\$0.35
Plan 2	\$30	50	\$0.15 after free minutes are used

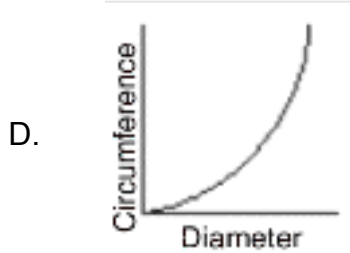
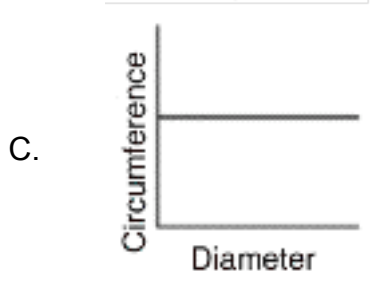
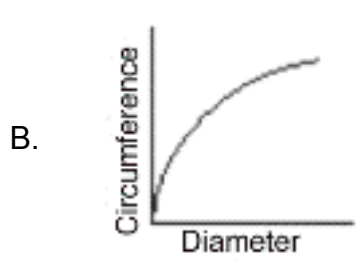
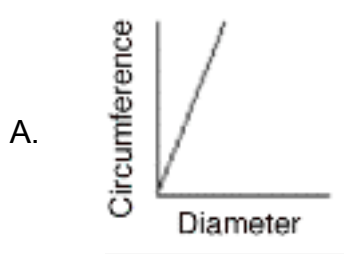
If he chooses Plan 1 and uses the phone exactly 50 minutes in one month, what will his bill be for that month?

Suppose that he chooses Plan 1 and uses the phone m minutes in one month. Write an equation for his total bill, B , for that month.

Item #21a

The circumference, C , of a circle is found by using the formula $C = \pi d$, where d is the diameter.

Which graph best shows the relationship between the diameter of a circle and its circumference?



Item #21b

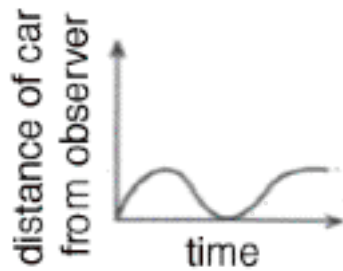
Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1	2	3	4	5	6	7
Not confident			Neutral			Very confident

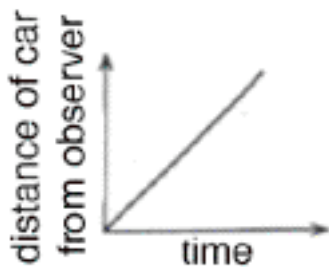
Item #22a

An observer is standing at the intersection of a figure eight racetrack. A single car is traveling on the track. Which graph best depicts the distance of the car from the observer at any time?

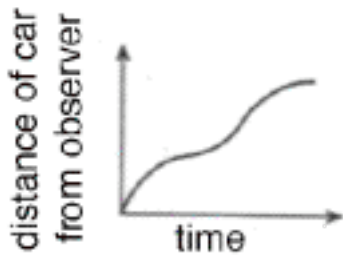
A.



B.



C.



D. None of these.

Item #22b

Below, please circle the number that corresponds to how confident you are in answering this question correctly.

1

2

3

4

5

6

7

Not confident

Neutral

Very confident