

Grade 7 Mathematics Reference Sheet*

CONVERSIONS

1 inch = 2.54 centimeters

1 meter = 39.37 inches

1 mile = 5,280 feet

1 mile = 1,760 yards

1 mile = 1.609 kilometers

1 kilometer = 0.62 mile

1 pound = 16 ounces

1 pound = 0.454 kilogram

1 kilogram = 2.2 pounds

1 ton = 2,000 pounds

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 gallon = 3.785 liters

1 liter = 0.264 gallon

1 liter = 1,000 cubic centimeters

FORMULAS

Triangle

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

Parallelogram

$$A = bh$$

Circle

$$A = \pi r^2$$

Circle

$$C = \pi d \text{ or } C = 2\pi r$$

General Prisms

$$V = Bh$$

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GO ON

Practice 2: Book 1

Answer questions 1 through 33. You may use a calculator. Use the π key on your calculator for calculations requiring the value of pi. The use of shortened decimal forms or $\frac{22}{7}$ are not acceptable.

1

The elevation of the surface of the Dead Sea is -424.3 meters. In 2005, the height of Mt. Everest was measured as $8,844.43$ meters. How much higher was Mt. Everest?

- A $-9,268.73$ meters
- B $-8,420.13$ meters
- C $8,420.13$ meters
- D $9,268.73$ meters

2

Amber has some state quarters in her pocket. She collects the following data by randomly pulling one quarter, recording the state, and then replacing it.

New York	Connecticut	New York	New York	Rhode Island
Connecticut	New York	Pennsylvania	Connecticut	Rhode Island
New York	Rhode Island	Connecticut	Pennsylvania	New York
Pennsylvania	New York	New York	Connecticut	Pennsylvania
New York	Pennsylvania	Rhode Island	Rhode Island	New York

Which is the **best** estimate of the number of times Amber would pull out a New York quarter if she pulled out a quarter another 300 times?

- A 60
- B 90
- C 120
- D 180

GO ON

3 Mai spends $7\frac{3}{5}$ hours in school each day. Her lunch period is 30 minutes long, and she spends a total of 42 minutes switching rooms between classes. The rest of her day is spent in 6 classes that are all the same length. How long is each class?

A $1\frac{1}{15}$ hours

B $1\frac{3}{20}$ hours

C $1\frac{11}{60}$ hours

D $1\frac{4}{15}$ hours

4 Which equation is true?

A $\frac{4}{-9} = \frac{-4}{9}$

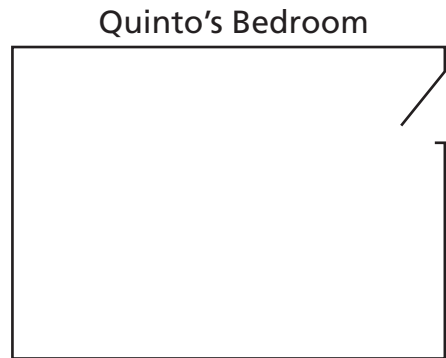
B $\frac{4}{-9} = \frac{2}{-3}$

C $\frac{4}{-9} = \frac{4}{9}$

D $\frac{4}{-9} = \frac{2}{3}$

5

The figure below is a scale drawing of Quinto's bedroom. The scale used to create the drawing is $\frac{1}{2}$ inch to 4 feet.



What is the approximate area of Quinto's bedroom?

- A 62 square feet
- B 169 square feet
- C 192 square feet
- D 234 square feet

GO ON

6

What is $\frac{4}{9}$ written as a decimal?

- A** 0.44
- B** $0.\overline{4}$
- C** $2.\overline{2}$
- D** 2.25

7

What is the result of adding $-2.9a + 6.8$ and $4.4a - 7.3$?

- A** $7.3a + 14.1$
- B** $2.5a - 1.5$
- C** $1.5a + 0.5$
- D** $1.5a - 0.5$

8

The math club needs to raise more than \$552.50 for a trip to the state competition. The club has raised 12% of the funds. Which inequality shows how much money each of the 7 club members needs to raise if each raises the same amount?

- A** $m < \$69.45$
- B** $m > \$69.45$
- C** $m < \$72.35$
- D** $m > \$72.35$

9

A company's stock begins the week with a price of \$43.85 per share. The price changes by \$2.70 each day for 2 days. Then the price changes by $-\$1.10$ each day for 2 days. On the last day, the price changes by $-\$4.45$. What is the price per share of the company's stock after those five days?

- A** \$41.00
- B** \$42.60
- C** \$45.10
- D** \$55.90

10

Cleo wants to join a gym. There is an initiation fee of \$24.99, and each month of membership costs \$12.50. If Cleo pays \$174.99, how long will this membership last?

- A** 5 months
- B** 7 months
- C** 12 months
- D** 14 months

GO ON

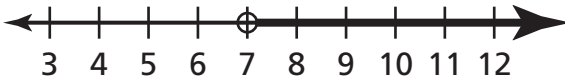

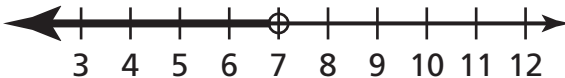

In the equations below, x is the independent variable, and y is the dependent variable.

Equation Number	Equation
1	$4y = 3x$
2	$8y = 5x$
3	$8y = 6x$
4	$5y = 8x$

Which two equations have the same constant of proportionality?

- A 2 and 4
- B 2 and 3
- C 1 and 3
- D 1 and 2

Kathy is packing her suitcase for a trip. She wants the total weight of the suitcase to be no more than 50 pounds. The total weight so far is $37\frac{1}{2}$ pounds. She wants to add books that weigh $1\frac{3}{4}$ pounds each. Which inequality shows the number of books she can add to her suitcase?

- A 
- B 
- C 
- D 

13

Greta learned that about 10% of people are left-handed. She ran 10 different simulations using random digits to find the probability that there is a left-handed person in a group of 5 randomly selected people. In the table below, 0 represents a left-handed person and 1 through 9 represent a right-handed person. Each row represents one simulation of 5 people.

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

Based on Greta's simulations, what is the probability that in a group of 5 people, at least 1 person will be left-handed?

- A** 6%
- B** 20%
- C** 30%
- D** 60%

GO ON

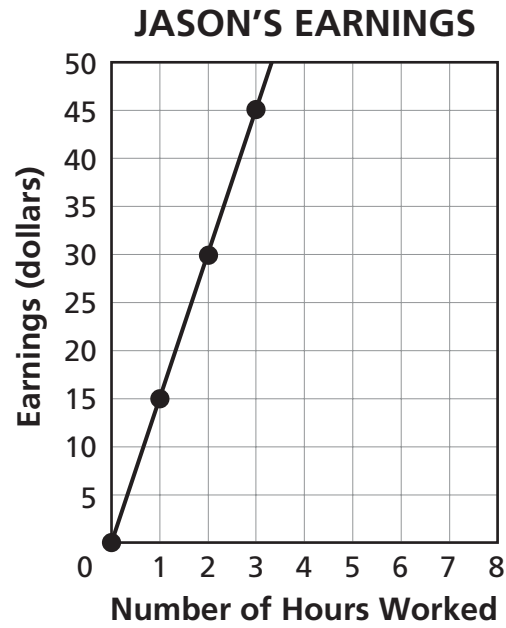
Antwon gathered data on the ages of 15 randomly-chosen parents of students in his school. He recorded the data in the table below.

36	32	51	31	30
42	56	32	43	54
26	43	38	43	28

Which is the **best** prediction that Antwon can make about the ages of the parents of all of the students at his school?

- A** There are not any parents older than 54.
- B** Most parents are about 43 years old.
- C** The mean age is about 39.
- D** At least half the parents are more than 45 years old.

The graph below shows Jason's earnings based on the number of hours he works.



What point on the graph represents Jason's hourly pay rate?

- A** (0, 0)
- B** (1, 15)
- C** (2, 30)
- D** (3, 45)

16

The numbers of consecutive days that several friends went running is shown below.

32, 46, 42, 30, 38, 47, 51, 35

What is the median of the data?

- A** 34
- B** 38
- C** 40
- D** 42

17

Daphne has 3 days to drive 932.4 miles. She wants to have completed about 75% of the drive by the start of day 3. Which of the following is the **closest** to the distance she should drive on each of the first two days?

- A** 230 miles
- B** 310 miles
- C** 350 miles
- D** 700 miles

18 What is the value of $-\frac{3}{4} - \left(-\frac{3}{8}\right)$?

A $-1\frac{1}{8}$

B $-\frac{3}{8}$

C $\frac{3}{8}$

D $1\frac{1}{8}$

19 What is the value of $-\frac{1}{6} + \frac{2}{3}\left(9 - \frac{3}{4}\right) - \frac{1}{2}$?

A $\frac{62}{12}$

B $\frac{58}{12}$

C $\frac{55}{12}$

D $\frac{3}{12}$

GO ON

20

The Mulraney's home has 2,550 square feet of living space. A contractor is building an addition to their home that will increase the square footage by 8%. What will be the square footage of their home with the addition?

- A 2,040 square feet
- B 2,558 square feet
- C 2,654 square feet
- D 2,754 square feet

21

A bicycle normally sells for \$239.99. It is now on sale for 25% off. As an employee, Baron is able to save an extra 10% off the sale price. How much, to the **nearest dollar**, would Baron need to pay for the bicycle?

- A \$156
- B \$162
- C \$174
- D \$205

22

Which expression is equivalent to $14 - 9$?

- A $-14 + 9$
- B $-9 - 14$
- C $9 - (-14)$
- D $14 + (-9)$

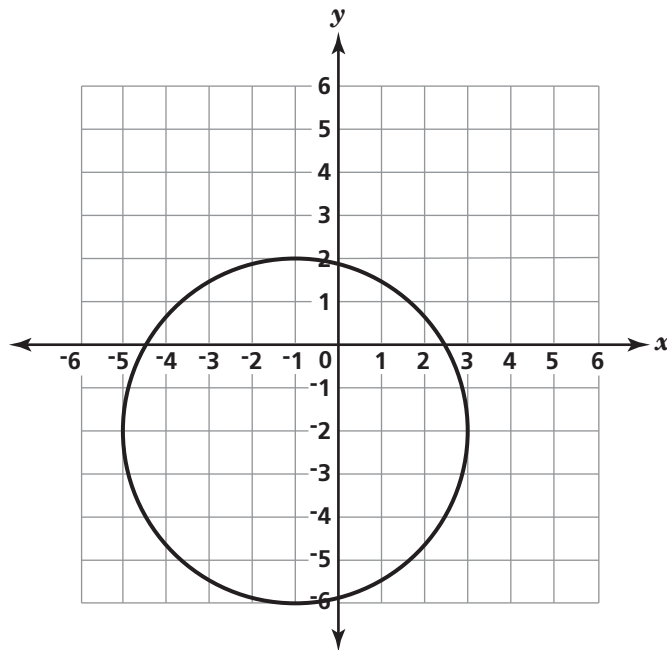
23

Which of the following situations could be represented by the expression $-3 + 3$?

- A** Nadia owes \$3 and then charges another \$3.
- B** Juan pays \$3 on the \$3 he owes in fines.
- C** There is a change in temperature from -3°F to 3°F .
- D** A toy car travels at a rate of 3 meters per minute for 3 minutes.

24

The figure shows a circle graphed on a coordinate plane.



What is the approximate circumference of the circle?

- A** 12.6 units
- B** 25.1 units
- C** 39.5 units
- D** 50.3 units

GO ON

25

Patrick read 20 pages of his book in 4 hours. Todd read 25 pages in 5 hours. Did both boys read at the same rate?

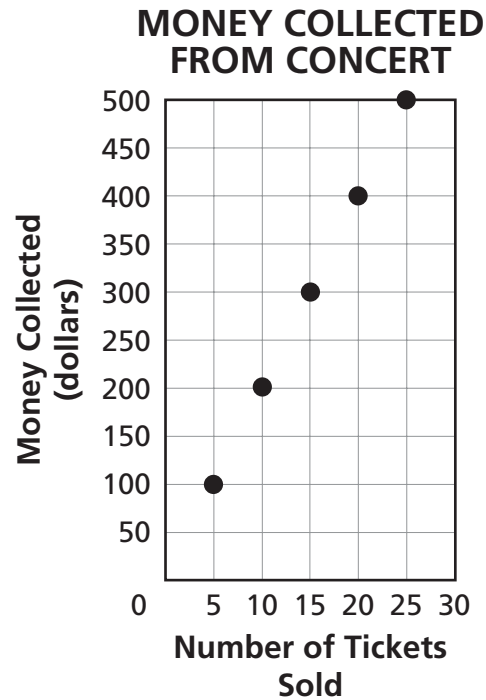
- A** No, because $\frac{25 \text{ pages}}{4 \text{ hours}} > \frac{20 \text{ pages}}{5 \text{ hours}}$.
- B** No, because $\frac{20 \text{ pages}}{4 \text{ hours}} < \frac{25 \text{ pages}}{5 \text{ hours}}$.
- C** Yes, because $\frac{25 \text{ pages}}{4 \text{ hours}} = \frac{20 \text{ pages}}{5 \text{ hours}}$.
- D** Yes, because $\frac{20 \text{ pages}}{4 \text{ hours}} = \frac{25 \text{ pages}}{5 \text{ hours}}$.

26

A circular plate has a diameter of 9 inches. What is the area of the plate?

- A** 12.56π square inches
- B** 16π square inches
- C** 20.25π square inches
- D** 81π square inches

Martin's class is organizing a concert to raise money for a charity. The graph below shows the relationship between the number of tickets sold, n , and the money collected, m .

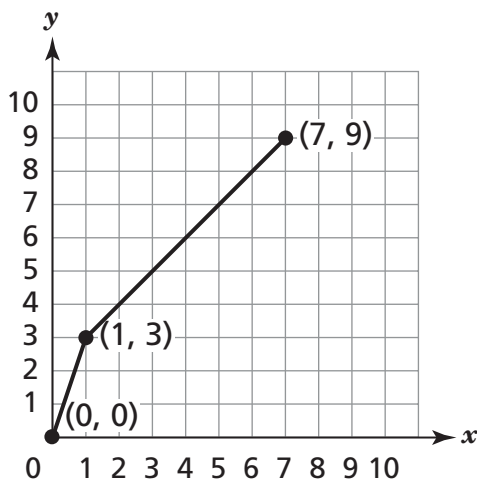
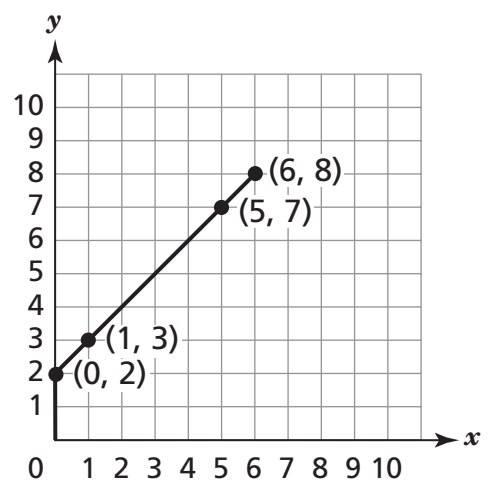
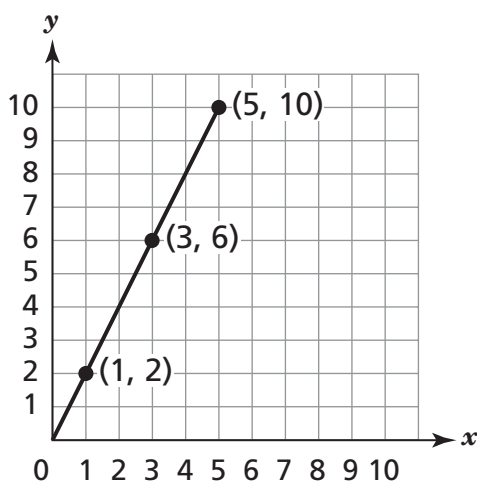
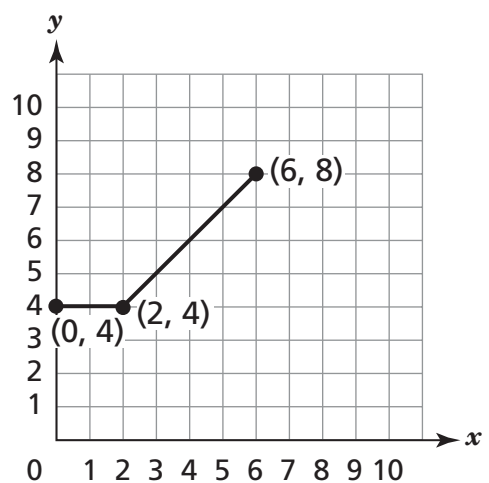


Which equation shows the relationship that is represented in the graph?

- A** $m = 20n$
- B** $m = 25n$
- C** $m = 200n$
- D** $m = 500n$

28What is $(-4.8y + 20.1) - (12.7y + 9.3)$?

- A** $-17.5y + 10.8$
- B** $-15.3y - 22$
- C** $7.9y + 29.4$
- D** $17.5y + 10.8$

29Which graph shows a proportional relationship between x and y ?**A****C****B****D**

30

Ann opened a savings account with an initial deposit of \$250. Which combination will result in a zero balance in Ann's account?

- A** deposit \$20 in the first week and withdraw \$270 in the second week
- B** deposit \$270 in the first week and withdraw \$20 in the second week
- C** deposit \$20 in the first week and withdraw \$250 in the second week
- D** deposit \$250 in the first week and withdraw \$20 in the second week

31

Will bought a package of 24 juice bottles for \$7.44. Which equation relates the cost, c , of a package of juice bottles to the number of bottles, b , in the package?

- A** $c = 0.31b$
- B** $c = 3.10b$
- C** $c = 3.23b$
- D** $c = 7.44b$

32

Which expression is equivalent to $-3(-6b + 5)$?

- A** $-18b - 15$
- B** $-6b - 15$
- C** $6b - 15$
- D** $18b - 15$

33

Javier is scuba diving while on vacation. Yesterday, he dove to -13.74 feet. Today, he plans to go 4 times as deep. How far is Javier planning to dive today?

- A** -54.96 feet
- B** -17.74 feet
- C** -9.74 feet
- D** -3.44 feet

STOP

Practice 2: Book 2

Answer questions 34 through 48. You may use a calculator. Use the π key on your calculator for calculations requiring the value of pi. The use of shortened decimal forms or $\frac{22}{7}$ are not acceptable.

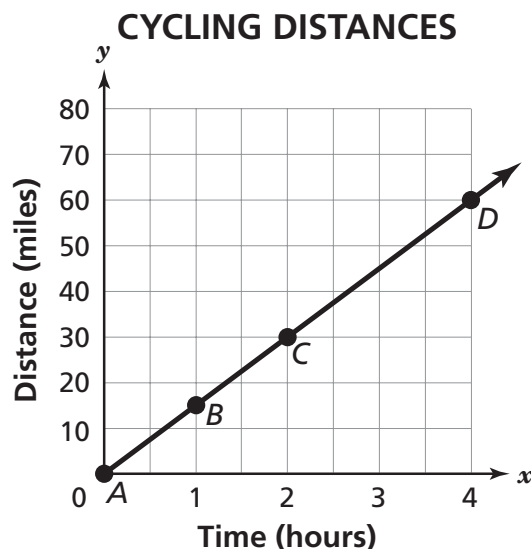
34

A store is having a 20% off sale. Michael says that he can find the sale price of an item that has a regular price of p by evaluating the expression $0.8p$. Susan says that she can find the sale price for the same item by evaluating the expression $p - 0.2p$. Who is correct?

- A Neither is correct.
- B Michael
- C Susan
- D Both are correct.

35

The graph shows the relationship between the amount of time Sheila rides her bicycle and the distance she travels.



Which point on the graph represents Sheila's average speed in miles per hour?

- A Point A
- B Point B
- C Point C
- D Point D

36

Sakiya surveyed students in her school about their favorite sports. On Monday, she randomly surveyed 85 students in the cafeteria. On Tuesday, she surveyed 15 of her teammates on the school soccer team. Which statement **best** describes the samples Sakiya used?

- A** Neither sample represents the school population.
- B** Both samples likely represent the school population.
- C** The data gathered on Tuesday most likely represent the school population, but the data gathered on Monday most likely do not.
- D** The data gathered on Monday most likely represent the school population, but the data gathered on Tuesday most likely do not.

37

Sarah uses $\frac{3}{4}$ pound of blueberries to make $\frac{2}{3}$ cup of jam. How many pounds of blueberries does she need to make one cup of jam?

- A** $\frac{1}{12}$
- B** $\frac{1}{2}$
- C** $1\frac{1}{8}$
- D** $1\frac{5}{12}$

38

According to the weather report, there is a 25% chance of snow in the mountains tomorrow. How likely is it to snow tomorrow in the mountains?

- A** It is unlikely to snow tomorrow because the probability of snow is greater than 0 but less than 0.5.
- B** It is likely to snow tomorrow because the probability of snow is greater than 0.
- C** It is almost certain to snow tomorrow because the probability is near 1.
- D** It is almost impossible that it will snow tomorrow because the probability is near 0.

GO ON

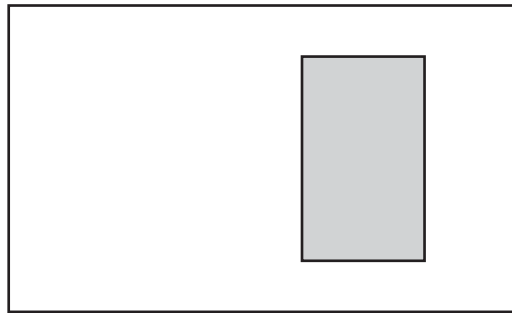
39

Jasmine took a cab home from her office. The cab charged a flat fee of \$4, plus \$2 per mile. Jasmine paid \$32 for the trip. How many miles was the cab ride?

- A** 5.33
- B** 7.50
- C** 14
- D** 26

40

Randy drew a rectangle inside another with the size shown below on a piece of paper. He places the paper outside during a light rain.



What is the approximate probability that a raindrop that lands on the paper will fall outside the shaded region?

- A** 16%
- B** 40%
- C** 60%
- D** 84%

41

A chef uses $3\frac{3}{4}$ pounds of semolina flour and $1\frac{5}{8}$ pounds of whole wheat flour for each batch of pasta she makes. One week she uses a total of 86 pounds of flour.

Write an equation to solve for b , the number of batches of pasta the chef makes during the week.

Equation _____

How many batches of pasta does she make?

Show your work.

Answer _____ batches

GO ON

42

A rectangle has a length of $(3.2a + 0.18b)$ centimeters. The width is half the length. Sasha writes the expression $(12.8a + 0.72b)$ to represent the perimeter of the rectangle in centimeters.

Is Sasha's reasoning correct? Explain.

43

Mr. Williams is planning a seventh-grade field trip to a math museum. School policy requires 2 adults as chaperones for every 9 students on the trip, and allows a food budget of \$6 per person. Educational group pricing at the museum is \$4.50 per student and \$7.25 per adult. There is also a bus parking fee that is 4% of the total ticket price.

There are 171 students in seventh grade. How much money does Mr. Williams need to budget for the museum tickets and parking?

Show your work.

Answer \$ _____ for museum tickets and parking

What is the total budget for tickets, parking, and food for all students and chaperones to go on the field trip?

Show your work.

Answer \$ _____ for the total budget

GO ON

44

William and Amy are stuffing envelopes for a charity. Today, William stuffed a total of 70 envelopes. This is 10 more than twice the number of envelopes that Amy stuffed.

Write an equation that can be used to find the number of envelopes, a , that Amy stuffed.

Equation _____

How many envelopes did Amy stuff?

Show your work.

Answer _____ envelopes

45

Patricia would like to spend less than \$9 at the grocery store. She bought 1 pound of tomatoes and wanted to spend the rest of her money on potatoes. One pound of tomatoes costs \$2.40, and one pound of potatoes costs \$2.20.

Write an inequality to show how many pounds of potatoes, x , Patricia can buy.

Inequality _____

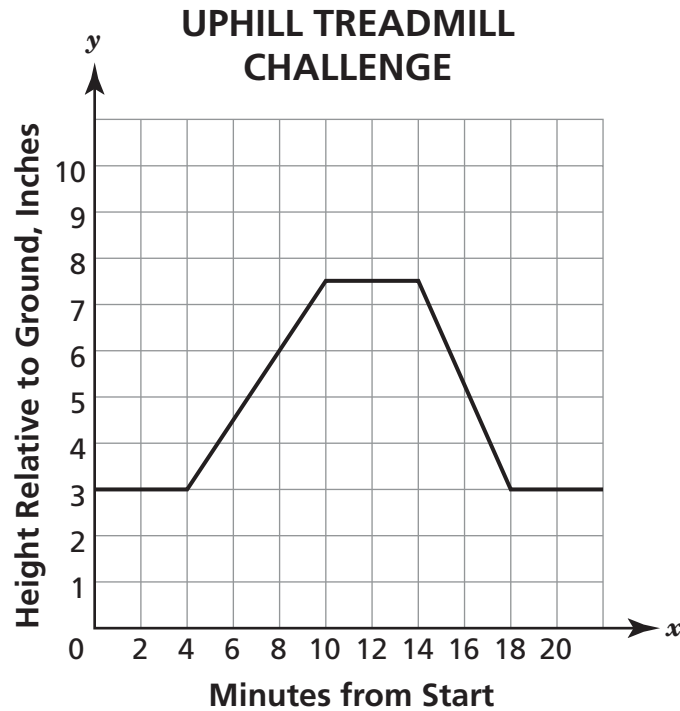
Solve the inequality above to find how many pounds of potatoes Patricia can buy.

Show your work.

Answer _____

GO ON

The graph below represents Landon's elevation relative to the ground as he runs on a treadmill for a programmed course.



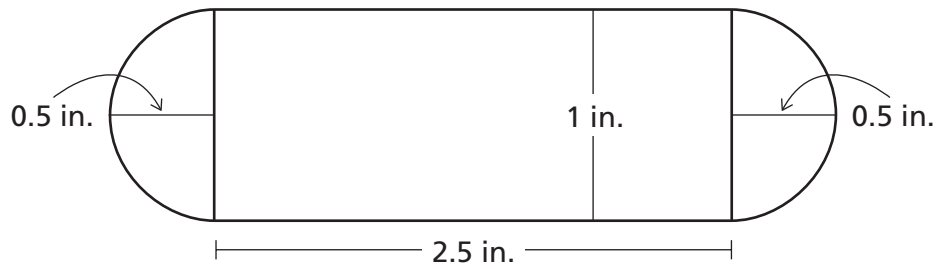
How many inches per minute does Landon's elevation change between 4 minutes and 8 minutes?

Answer _____ inch(es) per minute

During which time period does Landon's elevation change the fastest? Explain how you know.

47

The city is planning to add a fish pond to a neighborhood park. The figure below is a scale drawing of the fish pond. Its scale is $\frac{1}{2}$ inch to 15 feet.



To the nearest hundredth, what is the area of the actual fish pond?

Show your work.

Answer _____ square feet

The city will place a low fence around the entire fish pond. To the nearest hundredth, how long will the fence be?

Show your work.

Answer _____ feet

GO ON

Coach Wilson ordered T-shirts for the basketball team from two different T-shirt suppliers. Supplier 1 charged \$16 for each shirt, as well as 5% for shipping. Supplier 2 charged \$18 for each shirt, plus 7% for shipping. Coach Wilson ordered the same number of shirts from each supplier.

Write two expressions to represent the shipping charges he paid to both suppliers. Use x to represent the number of shirts ordered.

Expression for Shipping Charges for Supplier 1 _____

Expression for Shipping Charges for Supplier 2 _____

The first supplier gave Coach Wilson a discount of 10% off his order total, including shipping charges. The second supplier gave him a discount of \$20 off his order total, including shipping charges. Write two expressions to represent the total costs he paid to each supplier after the discounts. Use x to represent the number of shirts ordered.

Expression for Total Cost for Supplier 1 _____

Expression for Total Cost for Supplier 2 _____

Coach Wilson ordered 15 T-shirts from each supplier. How much did he pay in all?

Show your work.

Answer \$ _____

STOP

Ready® New York CCLS Mathematics Practice 2, Grade 7
Answer Form

Name _____

Teacher _____ Grade _____

School _____ City _____

Book 1

1. (A) (B) (C) (D)
2. (A) (B) (C) (D)
3. (A) (B) (C) (D)
4. (A) (B) (C) (D)
5. (A) (B) (C) (D)
6. (A) (B) (C) (D)
7. (A) (B) (C) (D)
8. (A) (B) (C) (D)
9. (A) (B) (C) (D)
10. (A) (B) (C) (D)
11. (A) (B) (C) (D)
12. (A) (B) (C) (D)
13. (A) (B) (C) (D)
14. (A) (B) (C) (D)
15. (A) (B) (C) (D)
16. (A) (B) (C) (D)
17. (A) (B) (C) (D)
18. (A) (B) (C) (D)
19. (A) (B) (C) (D)
20. (A) (B) (C) (D)
21. (A) (B) (C) (D)
22. (A) (B) (C) (D)
23. (A) (B) (C) (D)
24. (A) (B) (C) (D)
25. (A) (B) (C) (D)
26. (A) (B) (C) (D)
27. (A) (B) (C) (D)
28. (A) (B) (C) (D)
29. (A) (B) (C) (D)
30. (A) (B) (C) (D)
31. (A) (B) (C) (D)
32. (A) (B) (C) (D)
33. (A) (B) (C) (D)

Book 2

34. (A) (B) (C) (D)
35. (A) (B) (C) (D)
36. (A) (B) (C) (D)
37. (A) (B) (C) (D)
38. (A) (B) (C) (D)
39. (A) (B) (C) (D)
40. (A) (B) (C) (D)

For questions 41 through 48, write your answers in the book.

41. See page 51.
42. See page 52.
43. See page 53.
44. See page 54.
45. See page 55.
46. See page 56.
47. See page 57.
48. See page 58.

Cut along the dotted line.