Grades 7-8 Mathematics Training Test Answer Key

Florida
Standards Assessments

Question 1
Grade 7

1

Factor $6x - 9$.

Ⓐ $2(3x - 9)$

● $3(2x - 3)$

Ⓒ $3(3x - 2)$

Ⓓ $6(x - 9)$

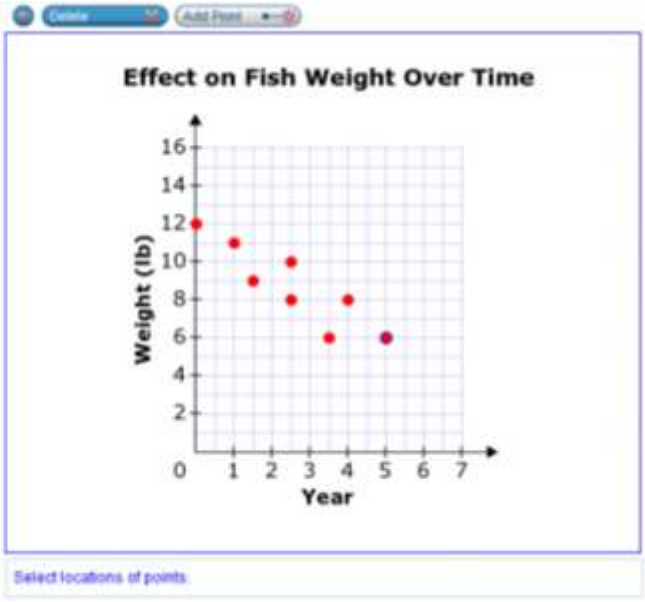
Option A is incorrect because the common factor of both terms is not 2 and the expression is not factored correctly.
Option B is correct because the common factor of both terms in the expression is 3 and the expression is correctly factored.
Option C is incorrect because the constant term and the coefficient of x were switched in the factored expression.
Option D is incorrect because the common factor of both terms is not 6 and the expression is not factored correctly.

Question 2
Grade 8

2

A scientist is researching changes to a river's ecosystem. He believes something is destroying the food source of the fish in the river over time.

Use the Add Point tool to plot **eight** points to complete a scatter plot so that it supports the scientist's claim.



Other Correct Responses:

- *any scatter plot that has a strong negative association of fish weight over time*

Question 3
Grade 8

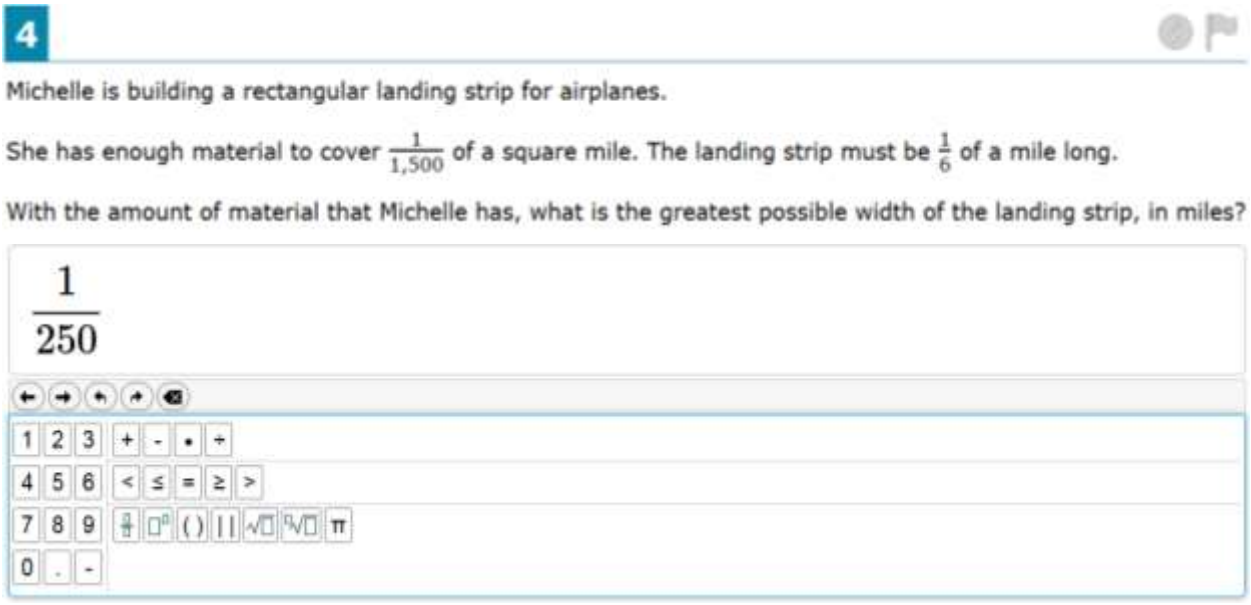
3

James wants to sort a set of numbers into two groups.

Drag each value to the correct column to show which are rational numbers and which are irrational numbers.

Rational Numbers	Irrational Numbers
$\sqrt[3]{8}$ $0.\overline{6}$	$\sqrt[3]{9}$
7.3 $\sqrt{9}$	$\sqrt{3}$ π

Question 4
Grade 7



Other Correct Responses:

- *0.004*

Question 5
Grade 8

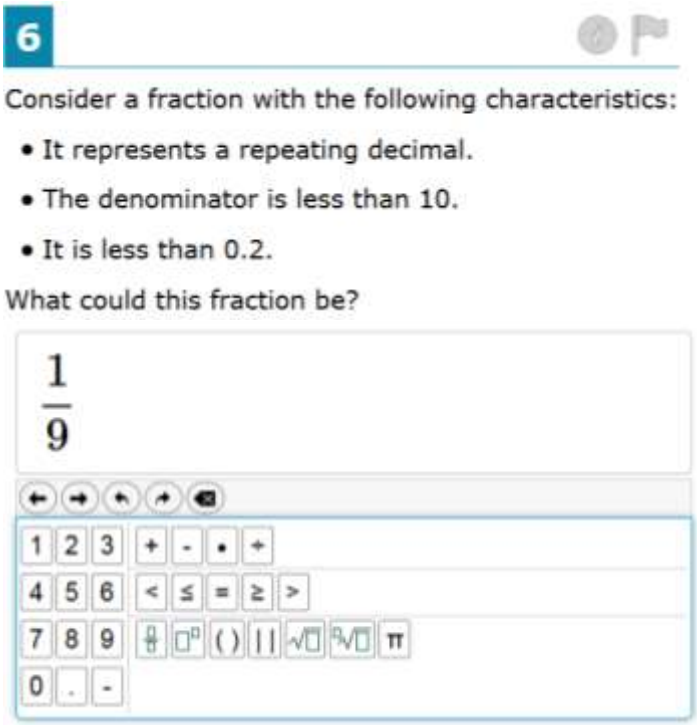
5

Select all the statements that are true about $\frac{22}{7}$.

- [x] It is a rational number.
- [ ] It is an irrational number.
- [ ] When it is written as a decimal, it terminates.
- [x] When it is written as a decimal, it repeats.
- [x] It is an approximate value of pi.
- [ ] When it is written as a decimal, it is equivalent to 3.10.

The first option is correct because $\frac{22}{7}$ is a rational number.
The second option is incorrect because $\frac{22}{7}$ is not an irrational number.
The third option is incorrect because $\frac{22}{7}$ repeats when written as a decimal.
The fourth option is correct because $\frac{22}{7}$ repeats when written as a decimal.
The fifth option is correct because $\frac{22}{7}$ is a common approximation of pi.
The sixth option is incorrect because $\frac{22}{7}$ as a decimal is 3.142857 (repeating).

Question 6
Grade 8



Other Correct Responses:

- $\frac{1}{6}$
- $\frac{1}{7}$

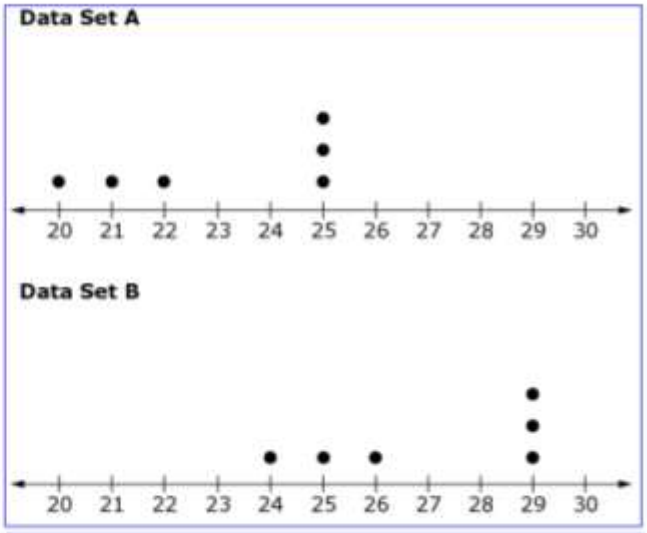
Question 7
Grade 7

7

Data Set A is shown.

Data Set A and Data Set B have the same mean absolute deviation. Data Set B has 6 elements.

Create Data Set B so that the mean is 2 mean absolute deviations larger than the mean for Data Set A. Click above the number line to create this data set.



Other Correct Responses:

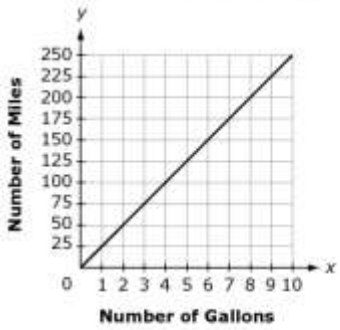
- *any data set with a mean absolute deviation of 2 and a mean of 27*

Question 8
Grade 7

8

Igor's car travels 25 miles on a gallon of gas. The car's gas tank has a capacity of 10 gallons. The distance Igor can travel is shown in the graph.

Distance Igor Can Travel



Before his trip, Igor stops at a gas station where 10 gallons of gas costs $41.90. His gas tank is already $\frac{2}{5}$ full and he spends $16.76 on gas.

What is the maximum distance, in miles, Igor can travel with the gas he now has in his tank?

200

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4 5 6 < ≤ = ≥ >
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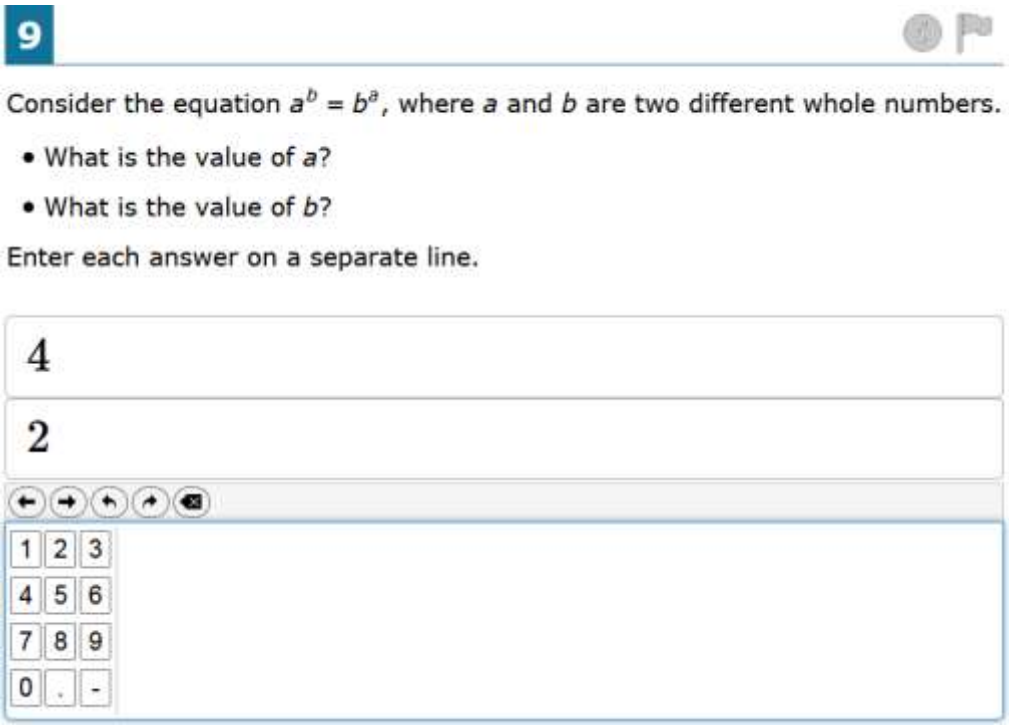
Other Correct Responses:

- *any equivalent value*

Question 9
Grade 8



Other Correct Responses:

- *The order of the responses may be reversed.*

Question 10
Grade 7

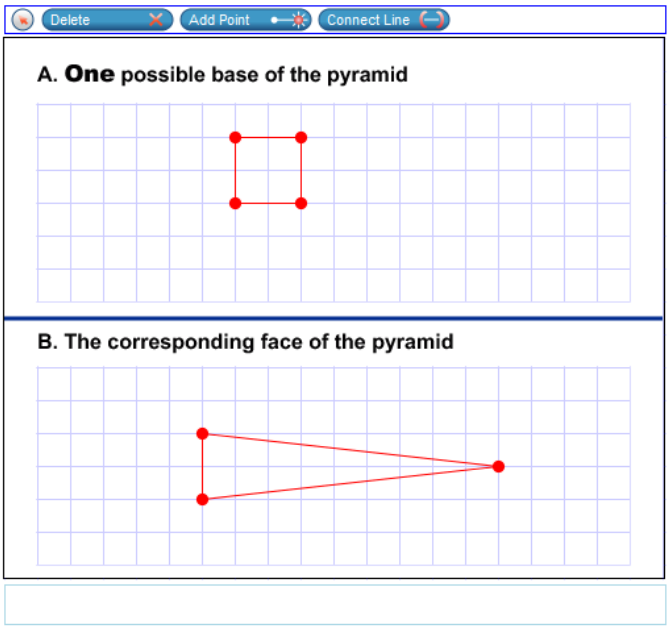
10

A square pyramid has a surface area of 40 square inches. The lengths of the pyramid's base, *b*, and slant height, *s*, are whole numbers.

A. Use the Connect Line tool to draw **one** possible base of the pyramid.

B. Use the Connect Line tool to draw the face of the pyramid with the base you drew in part A.

Each grid square has a side length that represents 1 inch.



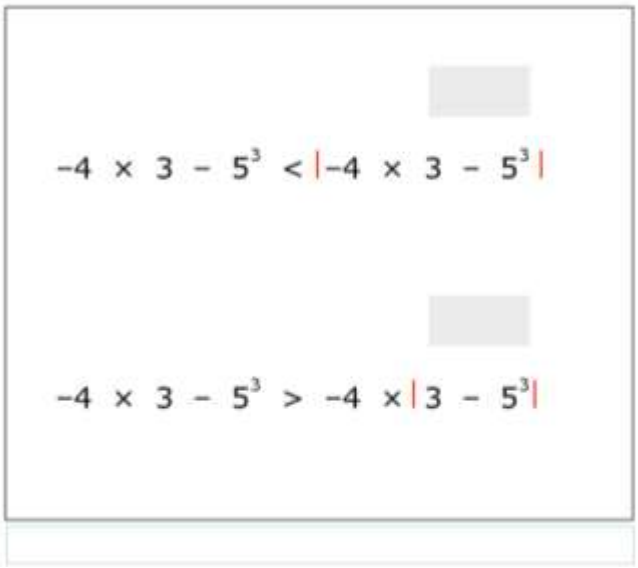
Other Correct Responses:

- *a base of side length 2 inches in part A and a face with a slant height of 9 inches in part B*
- *a base of side length 4 inches in part A and a face with a slant height of 3 inches in part B*

Question 11
Grade 7

11

Drag **one** set of absolute value symbols to the **right** side of each inequality to make the inequality true.



Other Correct Responses:

- *First row:*
  - $-4 \times 3 - 5^3 < |-4 \times 3 - 5^3|$
  - $-4 \times 3 - 5^3 < |-4 \times 3| - 5^3$
  - $-4 \times 3 - 5^3 < |-4| \times 3 - 5^3$
- *Second row:*
  - $-4 \times 3 - 5^3 > -4 \times |3 - 5^3|$
  - $-4 \times 3 - 5^3 > -4 \times 3| - 5^3|$

Question 12
Grade 7

12

Select all the expressions that are equivalent to −7.

- [x] $-\frac{14}{2} \times \frac{7}{7}$
- [x] $7 \times -1 \times -1 \times -1$
- [x] $-4 \times \frac{7}{4}$
- [ ] -7×-1
- [ ] 7^{-1}

The first option is correct because the product of the two numbers is −7.
The second option is correct because the product of the four numbers is −7.
The third option is correct because the product of the two numbers is −7.
The fourth option is incorrect because the product of two negative numbers is positive.
The fifth option is incorrect because the exponent does not indicate multiplication by −1.

Question 13
Grade 8

13

The table shows the amount of money in Jody's bank account on certain days.

Jody's Bank Account

Day (d)	Amount (a)
2	$ 83
5	$143
7	$183
11	$263
15	$343

Create an equation that models the relationship between the day, d, and the amount of money, a, in Jody's bank account.

$$a = 20d + 43$$

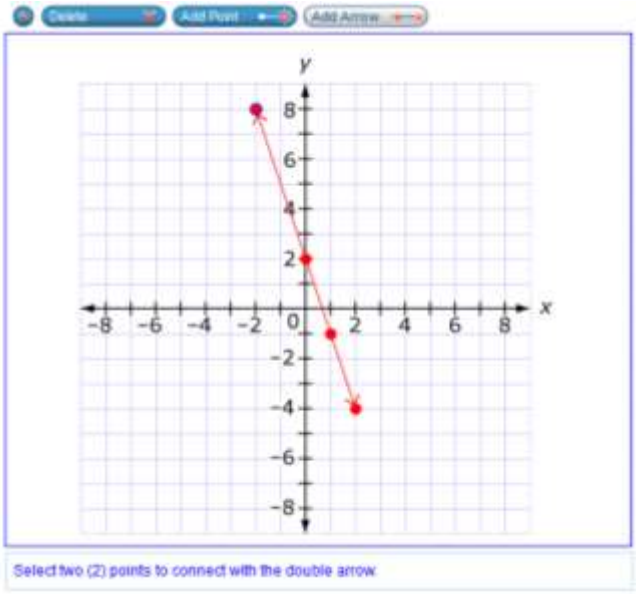
Other Correct Responses:

- *any equivalent equation*

Question 14
Grade 8

14

Use the Add Arrow tool to graph a line that has a slope of –3 and a *y*-intercept of 2.



Question 15
Grade 7

15

Lindsey used a bag of candy to do a probability experiment. In the experiment, she selected one piece of candy at random from the bag, recorded the color, and put the candy back in the bag. She performed this action 12 times and recorded her results in the table shown.

Probability Experiment

Candy Color	Number of Times Selected
Green	2
Orange	1
Purple	4
Yellow	5

Based on the results, what is the probability that the next piece of candy Lindsey selects will be a purple candy?

Ⓐ $\frac{1}{4}$

● $\frac{1}{3}$

Ⓒ $\frac{1}{2}$

Ⓓ $\frac{2}{3}$

Option A is incorrect because the probability of picking purple is calculated based on a uniform distribution instead of trial results.
Option B is correct because the probability of picking purple is found based on the trial results.
Option C is incorrect because the probability may have been calculated by excluding the number of times purple was selected from the number of total draws.
Option D is incorrect because the probability may have been calculated by finding the sum of all other colors and dividing by the number of trials.

Question 16
Grade 8

16

An equation is shown.

$a^b = c$

Both *a* and *c* are less than 0, and *b* is a positive integer.

State another fact that must be true about *b*. Give a complete statement to explain your reasoning.

Type your answer in the space provided.

b is odd and is not divisible by 2.

Other Correct Responses:

- *Any response that states b is an odd number and that it is not divisible by 2.*