Level 2: Expressions and Equations Posttest

Question 1:

Which expression shows another way to write 3^4?

a. 3 + 3 + 3 + 3

b. 4 + 4 + 4

c. 3 x 3 x 3 x 3

d. 4 x 4 x 4

Question 2:

A number is 7 less than the product of 6 and 9.

What is the number?

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Question 3:

A company on the Internet sells books. The company charges a shipping fee for each order of books. This equation represents the relationship between the price of books, b, in dollars and the total cost of an order, c, in dollars including the shipping fee.

$$b + 4 = c$$

Which table shows the relationship between the price of the books and the total cost including the shipping fee?

a.

Price of Books (b)	Total Cost (c)
$12	$8
$16	$12
$20	$16

b.

Price of Books (b)	Total Cost (c)
$12	$16
$16	$20
$20	$24

c.

Price of Books (b)	Total Cost (c)
$12	$14
$16	$18
$20	$22

d.

Price of Books (b)	Total Cost (c)
$12	$18
$16	$22
$20	$26

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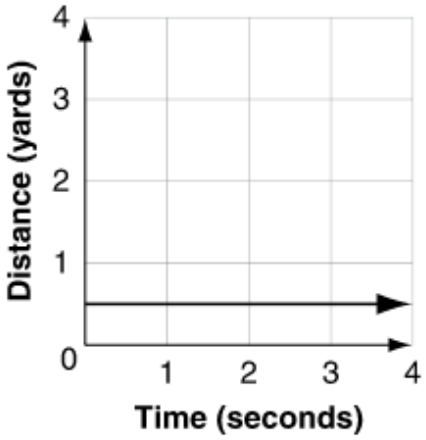
Question 4:

A skunk is walking at a speed of $\frac{1}{2}$ yard per second. This equation represents the relationship between the distance, d, walked in yards and the number of seconds, s, spent walking.

$$d = \frac{1}{2}s$$

Which graph represents this relationship?

a.



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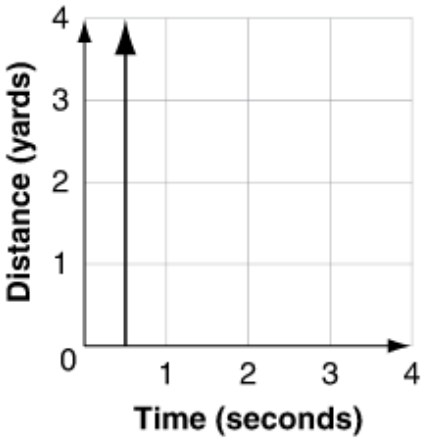
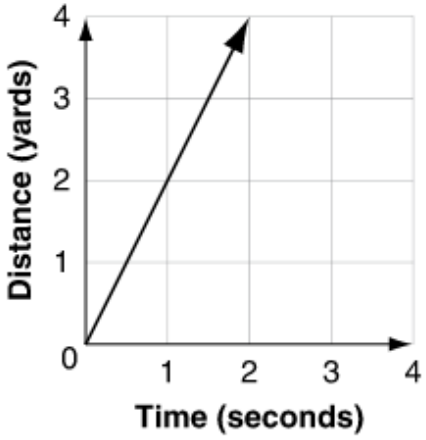
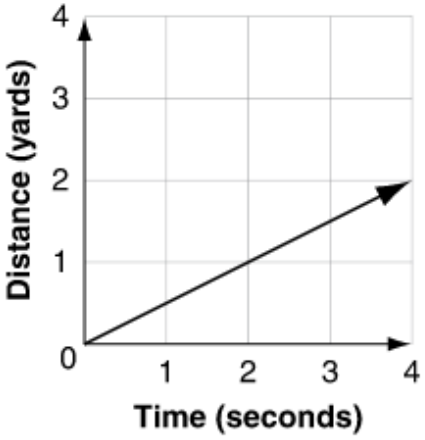


c.



d.



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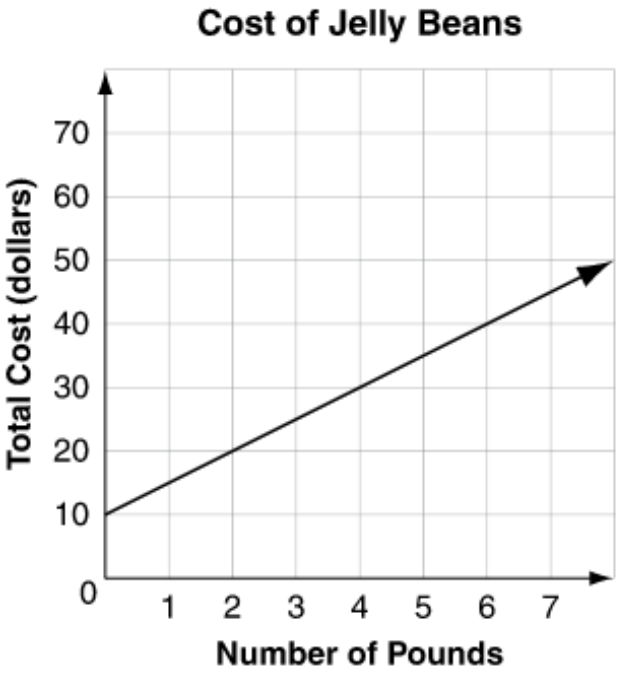
Question 5:

A business sells jelly beans over the Internet. The cost for different amounts of jelly beans, including shipping, is shown in the graph below.



What is the independent variable in this situation?

a. the shipping cost

b. the total cost

c. the cost per pound of jelly beans

d. the number of pounds of jelly beans

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Question 6:

At a bicycle shop, all the bicycles are on sale for $25 off the regular price.

If p represents the regular price of a bicycle, which expression gives the sale price, in dollars?

a. $-25p$

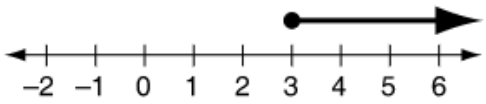
b. $25p$

c. $p - 25$

d. $p + 25$

Question 7:

This number line shows the solution to an inequality for x, a rational number.



Which of these describes the solution?

a. $x > 3$

b. $x < 3$

c. $x \geq 3$

d. $x \leq 3$

Question 8:

Courtney's father keeps the temperature in their home below 68 degrees in the winter.

Which inequality represents the temperature, t, in degrees, that he keeps in their home?

a. $t > 68$

b. $t < 68$

c. $t \geq 68$

d. $t \leq 68$

Continue

Question 9:

Chloe plans to practice playing the piano for more than 2 hours this weekend.

Which number sentence **best** represents the number of hours, n, that Chloe plans to practice?

a. $n < 2$

b. $n > 2$

c. $n < 3$

d. $n > 3$

Question 10:

A lizard was 19 millimeters in length when it hatched. It is growing in length at a rate of 2 millimeters per month.

Which equation shows the relationship between the number of months, t, the lizard grows, and its length, L, in millimeters?

a. $L = 2t + 19$

b. $L = 2t - 19$

c. $L = 19t + 2$

d. $L = 19t - 2$

Question 11:

A palm tree is x feet tall. It grows 10 feet taller in three years

Write an expression for the height, in feet, of the palm tree after three years.

Question 12:

Ben worked for n hours and earned $8 per hour. He went to a café after work and spent $7 for dinner.

Write an expression to show the number of dollars Ben had left after dinner.

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Question 13:

Manuel has a total of 64 books in his bookcase. He has read some of them. The equation below can be solved for x, the number of books in the bookcase that Manuel has **not** read.

$$x + 37 = 64$$

What value of x makes the equation true?

Question 14:

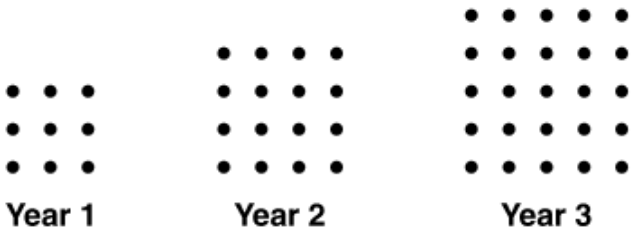
A farmer packaged 480 eggs into *n* cartons. Each carton holds the same number of eggs. The equation below can be solved to find *n*, the number of cartons needed to hold all the eggs.

$12n = 480$

What value of *n* makes this equation true?

Question 15:

A gardener is planting rose bushes in a pattern, as shown below. (Each dot represents one rose bush.)



If the pattern continues, which expression will give the number of rose bushes planted in Year n?

a. n^2

b. $3n$

c. $(n+2)^2$

d. $3(n+2)$

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Question 16:

A balloon is rising into the air at a constant rate. Its height above the ground is described by the equation below, where x is the time in seconds and y is the height in meters.

$$y = 5x + 8$$

Which table shows that relationship?

a.

x	y
0	5
1	10
2	15
3	20
4	25

b.

x	y
0	8
1	13
2	18
3	23
4	28

c.

x	y
0	5
1	13
2	21
3	29
4	37

d.

x	y
0	8
1	16
2	24
3	32
4	40

Question 17:

Yolanda baked 14 cupcakes. She wants to take a total of 20 cupcakes to a party.

Write an equation that can be used to determine x, the number of cupcakes Yolanda still needs to bake.

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Question 18:

Kira is selling pears at a fruit stand. She has p pears. After she sells 12 pears, she has 49 pears left.

a. Write an equation that models this situation.

b. Solve this equation for p.

$p =$ ☐

Question 19:

Janet owns c cats and d dogs.

- Each cat eats $\frac{5}{16}$ pound of food each day.
- Each dog eats $\frac{5}{8}$ pound of food each day.

Which expression represents the total number of pounds of food Janet's cats and dogs eat in 7 days?

a. $7cd\left(\frac{5}{16}+\frac{5}{8}\right)$

b. $7\left(\frac{5}{16}c+\frac{5}{8}d\right)$

c. $7\left(\frac{5}{8}c+\frac{5}{16}d\right)$

d. $7+\frac{5}{16}c+\frac{5}{8}d$

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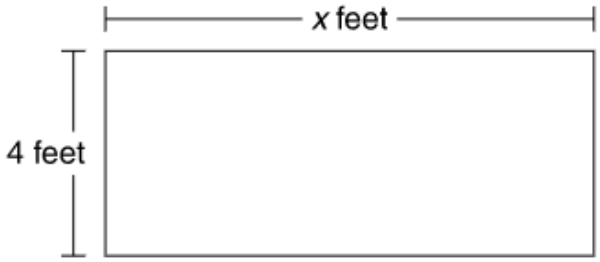
Question 20:

Phillip drew this rectangle.



The area of this rectangle is 24 square feet.

Which equation can Phillip use to find the length, x, of this rectangle?

a. $24 = x + 4$

b. $4 = \frac{24}{x}$

c. $x = 24 + x$

d. $24 = \frac{4}{x}$

Question 21:

Jane babysits for $8 per hour. She earned $240 last week. This equation can be used to find the number of hours, h, Jane babysat last week.

$$8h = 240$$

What could Jane do next to both sides of the equation to solve for h?

a. Divide by 8.

b. Multiply by 8.

c. Divide by 240.

d. Multiply by 240.

Continue

Question 22:

Chloe ordered cards by the box from a company.

- She ordered 14 boxes, but 3 of the boxes were damaged when they arrived.
- The company charged her c dollars per box.
- The cost of the damaged boxes was subtracted from the total cost.

Which expression represents the amount of money Chloe owes?

a. $11 - c$

b. $11c - 3c$

c. $14c - 3$

d. $14c - 3c$

Question 23:

Maria spent $17.40 on strawberries. The strawberries were sold by the pint. Maria bought p pints.

Which expression represents the cost of 1 pint of strawberries?

a. $17.40 + p$

b. $17.40p$

c. $\frac{p}{17.40}$

d. $\frac{17.40}{p}$

Stop