Algebra 1B Name _____

Practice Test for Keystone - From 2015 Released Items

Part One: Multiple Choice

1) Two expressions are shown below.

πx x^2

For which value of x is the value of πx greater than the value of x^2?

A) x = -2 B) x = 0 C) x = 1.5 D) x = 9

2. Which shows a correct procedure to simplify $3\sqrt{8}$?

A. $3\sqrt{8} = 3\sqrt{4 \bullet 2} = 3\sqrt{4} \bullet \sqrt{2} = 6\sqrt{2}$

B. $3\sqrt{8} = 3\sqrt{4 \bullet 2} = 3\sqrt{4} \bullet \sqrt{2} = 12\sqrt{2}$

C. $3\sqrt{8} = 3\sqrt{3 + 3 + 2} = 3(\sqrt{3 + 3} + \sqrt{2}) = 3 + 3\sqrt{2} = 6\sqrt{2}$

D. $3\sqrt{8} = 3\sqrt{3 + 3 + 2} = 3(\sqrt{3 + 3} + \sqrt{2}) = 9 + 3\sqrt{2} = 12\sqrt{2}$

3) The list below shows the items Ethan and his friends bought for lunch.

2 sandwiches for $5.29 each
2 burgers for $6.79 each
1 bowl of soup for $3.89
5 drinks for $1.19 each

They paid 8% tax. They then paid a tip that was about twice the amount of the tax they paid. Which is the closest estimate of the total amount Ethan and his friends paid for their food, drinks, tax, and tip?

A) $22 B) $33 C) $43 D) $51

4) The difference of 2 polynomial expressions is shown below.

$(-2x^2 + wx - 4) - (x^2 + 5x + 6) = -3x^2 - 10$

What is the value of w?

A) -8 B) -5 C) 2 D) 5

5) Keyshawn buys 100 baseball cards to start a collection. He purchases 25 more baseball cards each week. Which equation could be used to represent the number of baseball cards (b) in Keyshawn's collection after w weeks?

A) w = 25b + 100
B) w = 100b + 25
C) b = 25w + 100
D) b = 100w + 25

6) One of the steps Lewis used to correctly solve an equation is shown below

$3(x - 7) + 40 = -5$
$3x - 21 + 40 = -5$

Which statements describe the procedure Lewis used in this step of solving the equation and identify the property that justifies the procedure?

A) Lewis added 3 and x to eliminate the parentheses. This procedure is justified by the associative property.
B) Lewis added 3 and x to eliminate the parentheses. This procedure is justified by the distributive property.
C) Lewis multiplied x and 7 by 3 to eliminate the parentheses. This procedure is justified by the associative property.
D) Lewis multiplied x and 7 by 3 to eliminate the parentheses. This procedure is justified by the distributive property.

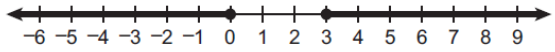
7) Raul has $640 saved and Jaime has $320 saved. They each begin a new job on the same day and save all of their money. Raul earns $180 per day and Jaime earns $200 per day. In how many days will they have an equal amount of money?

A) 8
B) 16
C) 24
D) 32

8. A compound inequality is shown below.

$x \leq 3$ and $x \geq 0$

Which graph represents the solution of the inequality?

A.


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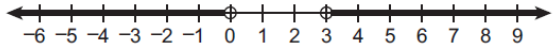
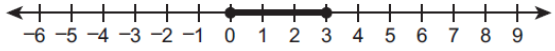


C.


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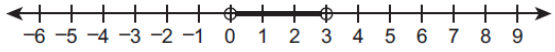
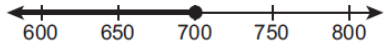
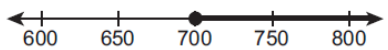
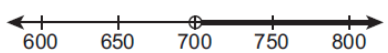


9) Patricia keeps apples in 3 bins and 2 crates in her store. Each bin can hold no more than 200 pounds. Each crate can hold no more than 50 pounds. Which graph represents all of the possible weights, in pounds, of apples Patricia can keep in her store?

A.


B.

C.


D.


10) Nitrogen is a gas at certain temperatures under normal conditions. These temperatures (t), in degrees Celsius (C°), are represented by the inequality $t \geq -196$. Which best descirbes the meaning of this inequality?

A) Nitrogen is a gas only if the temperature is below -196 C°.
B) Nitrogen is a gas only if the temperature is above -196 C°.
C) Nitrogen is a gas only if the temperature is at or below -196 C°.
D) Nitrogen is a gas only if the temperature is at or above -196 C°.

11) A band is determining how many songs to record for a new album. The band members want to record no more than 16 songs and their album has to be shorter than 78 minutes. They can record short songs that are about 3 minutes in length or long songs that are about 5 minutes in length. Which system of inequalities best represents the number of short songs (x) and the number of long songs (y) the band can record for the new album?

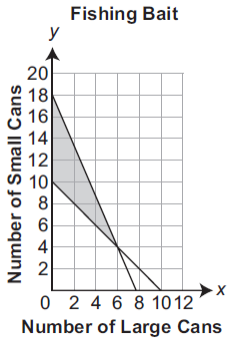
A. $x + y < 16$
$3x + 5y \leq 78$

B. $x + y \leq 16$
$3x + 5y < 78$

C. $x + y \leq 78$
$3x + 5y < 16$

D. $x + y < 78$
$3x + 5y \leq 16$

12) Nate will buy at least 10 cans of fishing bait. Each large can costs $7, and each small can costs $3. He will spend up to $54 on bait. The system of inequalities is graphed below.



Which combinination of cans could Nate buy?
A) 2 large cans and 6 small cans
B) 2 large cans and 10 small cans
C) 6 large cans and 10 small cans
D) 8 large cans and 2 small cans

Part Two: Constructed Response

13. John spends $94 to buy packages of cleaning supplies for a camp. He buys t packages of towels; each package is $6 and contains 8 towels. He also buys s packages of soap; each package is $4 and contains 10 bars of soap. John buys 20 packages of cleaning supplies altogether.

A. Write a system of two equations to represent the packages of cleaning supplies that John buys.

B. How many packages of towels does John buy?

C. Explain why it would not be possible for John to buy exactly 16 bars of soap.

14. Tom and Sally are at a carnival. At this carnival, participants earn tickets while playing different games. The tickets can then be turned in for prizes. Tom earns 5 tickets each time he plays the ring toss and 3 tickets each time he plays the fishing game. Sally earns 3 tickets each time she plays the ring toss and 4 tickets each time she plays the fishing game.

Tom needs to earn at least 15 tickets for the prize he wants. Sally needs to earn more than 12 tickets for the prize she wants.

A. Write a system of two linear inequalities to model the number of tickets Tom and Sally need to earn based on the number of times each plays the ring toss (x) and the number of times each plays the fishing game (y).

B. What is the least number of times Sally needs to play only the ring toss in order to have enough tickets for the prize that she wants?

C. Tom decides to play the ring toss only 1 time. After that, he will play the fishing game. What is the least number of times Tom needs to play the fishing game in order to have enough tickets for the prize he wants?

15.

There was a layer of snow on Joe's driveway when it began to snow again. As the snow fell, Joe measured the depth, in centimeters (cm), of snow on his driveway. After 10 minutes, he measured 2.0 cm of snow on the driveway. After 30 minutes, the snow was 3.6 cm deep. The snow continued to fall at the same constant rate. Joe graphed a line to represent the snowfall.

A. What should be the slope of Joe's line?

B. Explain what the slope means in this situation.

C. Write the equation for Joe's line.

D. How many minutes should it take for the depth of snow to reach 8 cm?