Algebra 2 Bellwork Wednesday, March 2, 2016

NO CALCULATOR CAN BE USED ON THESE QUESTIONS.

1. On Saturday afternoon, Armand sent m text messages each hour for 5 hours, and Tyrone sent p text messages each hour for 4 hours. Which of the following represents the total number of messages sent by Armand and Tyrone on Saturday afternoon?

   A) $9mp$

   B) $20mp$

   C) $5m + 4p$

   D) $4m + 5p$

2. Kathy is a repair technician for a phone company. Each week, she receives a batch of phones that need repairs. The number of phones that she has left to fix at the end of each day can be estimated with the equation $P = 108 - 23d$, where P is the number of phones left and d is the number of days she has worked that week. What is the meaning of the value 108 in this equation?

   A) Kathy will complete the repairs within 108 days.

   B) Kathy starts each week with 108 phones to fix.

   C) Kathy repairs phones at a rate of 108 per hour.

   D) Kathy repairs phones at a rate of 108 per day.

$$h = 3a + 28.6$$

3. A pediatrician uses the model above to estimate the height h of a boy, in inches, in terms of the boy's age a, in years, between the ages of 2 and 5. Based on the model, what is the estimated increase, in inches, of a boy's height each year?

   A) 3

   B) 5.7

   C) 9.5

   D) 14.3

#'s 4-6 are on the back.

4. $$m = \frac{\left(\frac{r}{1{,}200}\right)\left(1+\frac{r}{1{,}200}\right)^N}{\left(1+\frac{r}{1{,}200}\right)^N - 1} P$$

The formula above gives the monthly payment m needed to pay off a loan of P dollars at r percent annual interest over N months. Which of the following gives P in terms of m, r, and N ?

A) $P = \frac{\left(\frac{r}{1{,}200}\right)\left(1+\frac{r}{1{,}200}\right)^N}{\left(1+\frac{r}{1{,}200}\right)^N - 1} m$

B) $P = \frac{\left(1+\frac{r}{1{,}200}\right)^N - 1}{\left(\frac{r}{1{,}200}\right)\left(1+\frac{r}{1{,}200}\right)^N} m$

C) $P = \left(\frac{r}{1{,}200}\right) m$

D) $P = \left(\frac{1{,}200}{r}\right) m$

5. $$b = 2.35 + 0.25x$$
$$c = 1.75 + 0.40x$$

In the equations above, b and c represent the price per pound, in dollars, of beef and chicken, respectively, x weeks after July 1 during last summer. What was the price per pound of beef when it was equal to the price per pound of chicken?

A) \$2.60

B) \$2.85

C) \$2.95

D) \$3.35

6. If $x > 3$, which of the following is equivalent to $\frac{1}{\frac{1}{x+2}+\frac{1}{x+3}}$?

A) $\frac{2x+5}{x^2+5x+6}$

B) $\frac{x^2+5x+6}{2x+5}$

C) $2x+5$

D) x^2+5x+6

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Answers

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D) $4m + 5p$

5m > 5m+4p
4p

2. Kathy is a repair technician for a phone company. Each week, she receives a batch of phones that need repairs. The number of phones that she has left to fix at the end of each day can be estimated with the equation $P = 108 - 23d$, where P is the number of phones left and d is the number of days she has worked that week. What is the meaning of the value 108 in this equation?

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B) Kathy starts each week with 108 phones to fix.

C) Kathy repairs phones at a rate of 108 per hour.

D) Kathy repairs phones at a rate of 108 per day.

In $y = mx + b$
m = rate of change
& b = initial amount

$h = 3a + 28.6$

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C) 9.5

D) 14.3

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B) $P = \dfrac{\left(1+\frac{r}{1{,}200}\right)^N - 1}{\left(\frac{r}{1{,}200}\right)\left(1+\frac{r}{1{,}200}\right)^N} m$

C) $P = \left(\frac{r}{1{,}200}\right) m$

D) $P = \left(\frac{1{,}200}{r}\right) m$

The given equation has the following form:

$m = \frac{a}{b} P$

to solve for P you can multiply both sides by $\frac{b}{a}$ (reciprocal) and get $P = \frac{b}{a} m$

5. $b = 2.35 + 0.25x$

$c = 1.75 + 0.40x$

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A) \$2.60

B) \$2.85

C) \$2.95

D) \$3.35

$2.35 + .25x = 1.75 + .40x$

$.60 = .15x$

$4 = x$

$b = 2.35 + .25(4)$

$= 3.35$

6. If $x > 3$, which of the following is equivalent to $\dfrac{1}{\dfrac{1}{x+2} + \dfrac{1}{x+3}}$?

A) $\dfrac{2x+5}{x^2+5x+6}$

B) $\dfrac{x^2+5x+6}{2x+5}$

C) $2x+5$

D) x^2+5x+6

$\dfrac{1}{\frac{1}{x+2} + \frac{1}{x+3}} \cdot \dfrac{(x+2)(x+3)}{(x+2)(x+3)}$

$= \dfrac{(x+2)(x+3)}{x+3 + x+2}$

$= \dfrac{(x+2)(x+3)}{2x+5}$