Name: _____ Block: ____ Date: _____

MATH 9 - CHAPTER 7 - PRETEST

parent/guardian signature

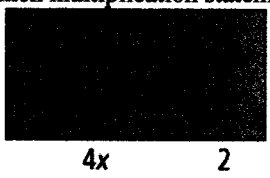
Multiple Choice

Circle the choice that best completes the statement or answers the question.

1. Which expression represents $\left(\frac{2}{3}\right)^2(3x)$ in simplified form? $\frac{4}{9}(3x) = \frac{4}{3}x$

   a. $\frac{4}{3}x$ b. $2x$ c. $4x$ d. $\frac{27}{2}x$

2. Which multiplication statement is represented by the area model below?



$3x(4x+2)$
$12x^2+6x$

   a. $(3x)(4x+2) = 12x^2+6x$ c. $(3x)(4x+2) = 7x+2$
   b. $(3x)(4x-2) = 12x^2-6x$ d. $(3x)(4x-2) = 7x-2$

3. The distance, in metres, travelled by a train, t seconds after the brakes are applied, is given by the expression $2t(20-t)$. What is the expanded form of this expression?

   a. $-t^2+2t+20$ c. $-40t+t^2$
   b. $40t-2t^2$ d. $t^2-2t-20$

$2t(20-t)$
$40t-2t^2$

Matching

Identify the letter of the term that is equivalent to the expression below. Each term may be used more than once or not at all. Place the letter beside the question number.

a. $-4x$ d. $4x^2$
b. $-4x-8$ e. $5x^2-4x$
c. $-6.2x^2$ f. $8x^2+12x$

c 4. $(3.1x)(-2x) = -6.2x^2$

a 5. $\frac{-8x^2}{2x} = -4x$

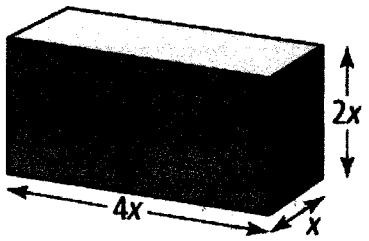
f 6. $(4x)(2x+3)$ $8x^2+12x$

e 7. $\frac{15x^2-12x}{3}$ $5x^2-4x$

b 8. $\frac{(x+2)(-4x)}{x}$ $(x+2)(-4) = -4x-8$

Short Answer

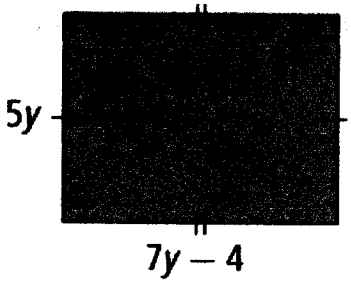
9. What is the volume of the rectangular prism below?



work $4x(x)(2x)$

answer $8x^3$

10. Write a simplified expression for the perimeter of this figure. What is the perimeter of the figure?



$5y + 7y - 4 + 5y + 7y - 4$
or $2(5y) + 2(7y - 4)$
or $10y + 14y - 8$

work

answer $24y - 8$

11. The dimensions of a package for an MP3 player are 5 cm, y cm, and $3y$ cm.
a) What is the expanded form of the expression for the volume of the package?

$5(y)(3y)$
$= 15y^2$

b) If $y = 3$, what is the volume of the package?

$15(3)^2 = 15(9)$
$= 135 \text{ cm}^3$

12. A pool table is twice as long as it is wide. If the area of the pool table is 2.88 m², what are the dimensions of the table?

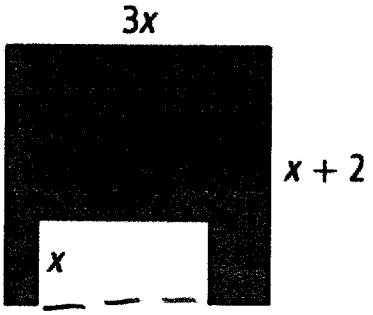
w $\quad l = 2w$

work

$w(2w) = 2.88$
$2w^2 = 2.88$
$w^2 = 1.44$

answer $\quad w = 1.2\text{m} \quad l = 2.4\text{m}$

13. A garden has the dimensions shown.



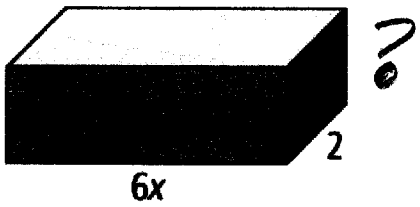
a) Determine an expression to represent the area of the garden.

$= 3x(x+2) - x(x+1)$
$= 3x^2 + 6x - x^2 - x = 2x^2 + 5x$

b) What is the area of the garden if $x = 6$ m?

$2(6)^2 + 5(6)$
$2(36) + 30$
$72 + 30$
$= 102\text{ m}^2$

14. A rectangular prism has a volume of $48x^2 + 12x$ cubic units. If the length is $6x$ units and the width is 2 units, what is the height of the rectangular prism?



work

$V = lwh$

$48x^2 + 12x = 6x(2)(h)$

$48x^2 + 12x = 12x(h)$

answer

$$\frac{48x^2 + 12x}{12x} = h$$

$4x + 1 = h$