1. What is the value of $6x^2$ when $x = \frac{1}{3}$?

a $\frac{2}{9}$

b $\frac{2}{3}$

c 2

d 4

2. Consider the expression below.

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

Which of the following is equivalent to this expression?

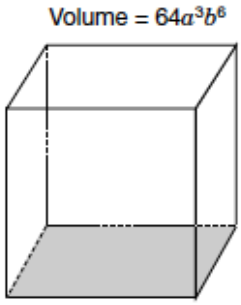
a $8x^2 - 2x + 1$

b $8x^2 + x + 4$

c $15x^4 - 2x + 1$

d $15x^4 - 6x^3 + 3x^2$

3. Expressions for the base area and volume of a prism are given below.



Which expression represents the height of the prism?

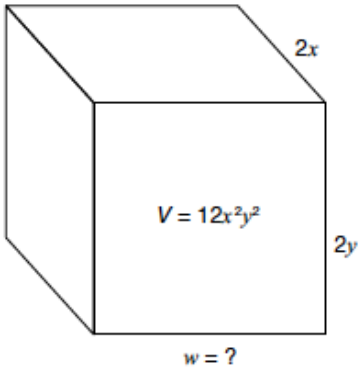
F $4a^2b^3$

G $4a^3b^3$

H $1024a^3b^9$

J $1024a^4b^9$

4. A box with a volume of $12x^2y^2$ is shown below.



Hint: $V = lwh$

What is the width of the box?

a $2xy$

b $3xy$

c $4x^3y^3$

d $8x^3y^3$

5. The expression below can be simplified.

$$\frac{(x^2y)^3}{(xy)^2}$$

Which of the following shows the expression in its simplest form?

a x^4y

b x^4

c xy

d x^3y

6. Meg has been asked to determine the value of the numerical expression below.

$$\frac{2^{400}}{2^{396}} - 2^3$$

Which of the following is the value of Meg's expression?

A 1

B 2

C 4

D 8

7. What is the value of the expression $\frac{5(-18 + 12)}{-4 + 1}$?

a 10

b 6

c −6

d −10

8. What is the value of $(x^2)^3$ when $x = \frac{1}{2}$?

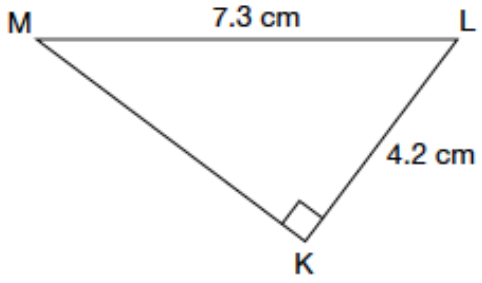
a $\frac{1}{4}$

b $\frac{1}{12}$

c $\frac{1}{32}$

d $\frac{1}{64}$

9. Triangle KLM is shown below.



Which of the following is closest to the perimeter of triangle KLM?

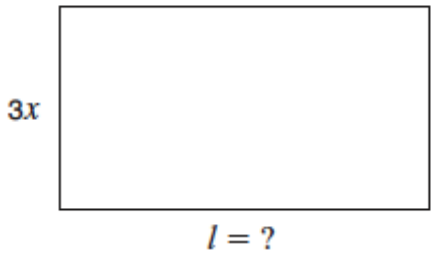
a 12.6 cm

b 16.3 cm

c 17.5 cm

d 21.0 cm

10. The area of the rectangle shown below is $6xy^2$ square units.



Hint: $A = lw$

If the width is $3x$ units, which expression represents the length of the rectangle?

a $2xy^2$ units

b $2y^2$ units

c $3xy^2$ units

d $3y^2$ units