Algebra I EOC Review – Unit 1

1.

A rectangular prism has a volume of 3 m^3, a length of 30 cm, and a width of 40 cm. What is the height of the prism?

$3{,}000{,}000\ cm = 30(40)(x)$

$2500\ cm = x$

$\&\ 25m$

A. .25 cm

B. 250 cm

C. 25 cm

D. 25 m

2.

What polynomial equals $(x+6)(2x-3)$?

$2x^2 - 3x + 12x$

A. $2x^2 + 9x - 18$

B. $2x^2 + 12x + 3$

C. $x^2 + 8x - 9$

D. $x^2 - 11x + 6$

3.

Look at the expression.

$2\sqrt{8} \cdot \sqrt{20}$

Which of these is equivalent to this expression?

A. $2\sqrt{28}$

B. 5

C. $8\sqrt{10}$

D. $32\sqrt{10}$

$4 \quad 2\sqrt{160}$

$\sqrt{16} \cdot 10$

$8\sqrt{10}$

4.

Which sum is rational?

I + R

A. $\pi + 18$

R + R

B. $\sqrt{25} + 1.75$

I + R

C. $\sqrt{3} + 5.5$

I + I

D. $\pi + \sqrt{2}$

5.

Jill swam 200 meters in 2 minutes 42 seconds. If each lap is 50 meters long, which time is her estimated time, in seconds, per lap?

162 sec

A. 32

B. 40

C. 48

D. 60

200 ⟨ 50, 50, 50, 50 ⟩ 162 sec ÷ 4 = 40.5

6.

What is the product of $7x - 4$ and $8x + 5$?

A. $15x + 1$

B. $30x + 2$

C. $56x^2 + 3x - 20$

D. $56x^2 - 3x + 20$

$(7x-4)(8x+5)$

$56x^2 + 35x - 32x$

7.

In which expression is the coefficient of the n term –1?

A. $3n^2 + 4n - 1$

B. $-n^2 + 5n + 4$

C. $-2n^2 - n + 5$

D. $4n^2 + n - 5$

8.

Which product is irrational?

I II

A. $\sqrt{2} \cdot \sqrt{50} \rightarrow \sqrt{2} \cdot 5\sqrt{2} = 5\sqrt{4} = 10$ R

R R

B. $\sqrt{64} \cdot \sqrt{4}$

R R

C. $\sqrt{9} \cdot \sqrt{49}$

I I

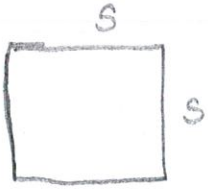
D. $\sqrt{10} \cdot \sqrt{8}$ $\quad \sqrt{80} \quad = 4\sqrt{5}$ I

$16\ 5$

9.

The expression s^2 is used to calculate the area of a square, where s is the side length of the square. What does the expression $(8x)^2$ represent?

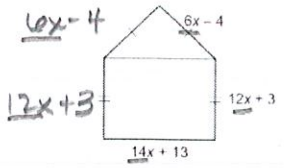
A. the area of a square with a side length of 8
B. the area of a square with a side length of 16
C. the area of a square with a side length of $4x$
D. the area of a square with a side length of $8x$



$S^2 = S \cdot S = (8x)^2$

10.

A model of a house is shown.



What is the perimeter, in units, of the model?

A. $32x + 12$
B. $46x + 25$
C. $50x + 11$
D. $64x + 24$

$6x + 6x + 12x + 12x + 24x + 12x + 36x + 14x$

11.

Which expression has the same value as the expression $(8x^2 + 2x - 6) - (5x^2 - 3x + 2)$?

A. $3x^2 - x - 4$
B. $3x^2 + 5x - 8$
C. $13x^2 - x - 8$
D. $13x^2 - 5x - 4$

$8x^2 + 2x - 6 - 5x^2 + 3x - 2$

$3x^2 + 5x$

12.

Simplify the following expression: $\sqrt{20a^4b^9}$

A. $2ab\sqrt[4]{5a}$
B. $2a^2b^4\sqrt{5b}$
C. $5ab\sqrt[2]{2b}$
D. $5a^2b^4\sqrt{5a}$

$* 5$

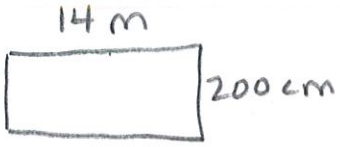
$2a^2\sqrt{5}$

13.

A rectangle has a length of 14 meters and a width of 200 centimeters. What is the area of the rectangle in meters?

1 meter = 100 centimeters

A. 28 m^2
B. 428 m^2
C. 2,800 m^2
D. 280,000 m^2



$200\text{cm} * \frac{1\text{m}}{100\text{cm}} = 2\text{m}$

14×2

14.

Which answer choice is equivalent to the expression?

$(x + 6)^2$

A. $x^2 + 12x + 12$
B. $x^2 + 12x + 36$
C. $x^2 + 6x + 36$
D. $x^2 + 36$

$(x+6)^2 = (x+6)(x+6)$

$= x^2 + 12x + 36$

15.

A plumber charges a flat fee for each job, plus an hourly rate for the number of hours the job takes to complete. The total cost of the job, in dollars can be modeled by the expression $50 + 65x$. What does the constant term in the expression represent in this situation?

A. The flat fee
B. The number of jobs
C. The cost per hour
D. The number of hours the job takes to complete