

8th Grade Unit 2 Assessment Items

Multiple Choice

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

- Simplify $3^5 \cdot 3^3 \cdot 3^2$ using positive exponents.
A. 3^{10}
B. 27^{10}
C. 3^{30}
D. 27^{30}
- Simplify the expression: $\frac{v^2}{v^6}$.
A. $\frac{v^2}{v^4}$
B. $\frac{v}{v^{12}}$
C. $\frac{1}{v^4}$
D. v^4
- Simplify $\frac{1}{2^{-3}}$.
A. 8
B. 6
C. $\frac{1}{6}$
D. $\frac{1}{8}$
- Simplify $\left(\frac{5}{9}\right)^{-2}$.
A. $\frac{25}{81}$
B. $\frac{81}{25}$
- Simplify $\left(\frac{1}{25}\right)^0$.
A. 0
B. 1
C. 5
D. 25
- Simplify $(1.95 \times 10^6) \div (3 \times 10^2)$ and write the answer in scientific notation.
A. 65
B. 6.5×10^3
C. 6.5×10^8
D. 6.5×10^5
- There are 6.02×10^{23} atoms in 1 gram of hydrogen. How many atoms are there in 400 grams of hydrogen? Write your answer in scientific notation. If necessary, round your answer to two decimal places.
A. 2.41×10^{26}
B. 2.41×10^{23}
C. 2.41×10^{20}
D. 24.08×10^{25}
- In 2010, the population of Barbados was about 2.57×10^5 . The population of Jamaica was about 2.73×10^6 . About how much more was the population of Jamaica than Barbados?
A. 1.6×10^0
B. 1.6×10^1
C. 2.473×10^5
D. 2.473×10^6
- Which is the sum of $(3.12 \times 10^8) + (5.51 \times 10^7)$?
A. 3.1751×10^8
B. 3.671×10^8
C. 5.822×10^8
D. 8.63×10^8
- A passenger plane travels at about 7.97×10^2 feet per second. The plane takes 1.11×10^4 seconds to reach its destination. About how far must the plane travel to reach its destination? Write your answer in scientific notation.
A. 8.85×10^8 feet
B. 9.08×10^6 feet
C. 8.85×10^6 feet

D. 9.08×10^8 feet

11. The population of a particular country is 1.253×10^7 . The population of a city inside the country is 1.79×10^6 . Write each population in standard form. About how many times as great is the population of the country as the population of the city?

- A. 1,253,000; 179,000; 7
B. 12,530,000; 1,790,000; 7
C. 125,300,000; 1,790,000; 70
D. 12,530,000,000; 179,000,000; 70

12. Radio signals travel at a rate of 3.00×10^8 meters per second. How many seconds will it take for a radio signal to travel from a satellite to the surface of Earth if the satellite is orbiting at a height of 1.38×10^8 meters?

- A. 0.414 seconds
B. 0.460 seconds
C. 4.14 seconds
D. 0.0460 seconds

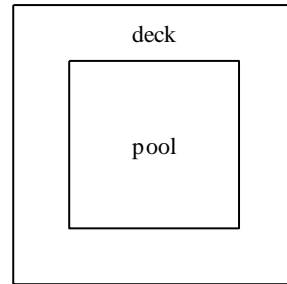
13. A square room has a tiled floor with 225 square tiles. How many tiles are along an edge of the room?

- A. 15 tiles
B. 14 tiles
C. 56 tiles
D. 112 tiles

14. A square mosaic is made of small glass squares. If there are 256 small squares in the mosaic, how many are along an edge?

- A. 64 squares
B. 14 squares
C. 16 squares
D. 128 squares

15. Randal's dad is installing a new pool in their backyard. The pool is a square and has an area of 144 ft^2 . Randal's dad will then build a 6 ft wide deck to surround the pool. What is the outside perimeter of the deck?



- A. 48 ft
B. 72 ft
C. 24 ft
D. 96 ft

16. Which answer choice is the solution to the equation below?

$$x^3 = \frac{27}{125}$$

- A. $x = 0.216$
B. $x = \frac{1}{5}$
C. $x = \frac{9}{41}$
D. $x = \frac{3}{5}$

17. Simply the expression

$$\sqrt[3]{729}$$

- A. 9
B. 27
C. 81
D. 243

18. State if the number $\frac{\sqrt{16}}{2}$ is rational, irrational, or not a real number.

- A. irrational
B. rational
C. not a real number

19. Which of the following is an irrational number?

- A. $\sqrt{21}$
B. 2.59×105
C. $\sqrt{81}$
D. $-\frac{1}{3}$

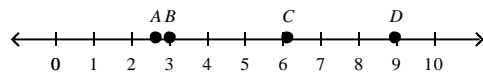
20. Which of the following is an irrational number?

- A. $0.\bar{3}$
- B. $\sqrt{49}$
- C. $\frac{3}{8}$
- D. π

Which point best represents $\sqrt{55}$? Explain your answer.

- A. A because it is about halfway between 7 and 8.
- B. B because it is a little less than 8.
- C. C because it is greater than 8.
- D. D because it is exactly 11.

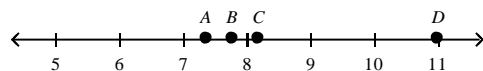
21.



Which point best represents π ? Explain your answer.

- A. A because it is a little less than 3.
- B. B because it is a little more than 3.
- C. C because it is about 6.28.
- D. D because it is the same as 3^2 .

22.



23. Approximate $\sqrt{130}$ to the nearest hundredth.

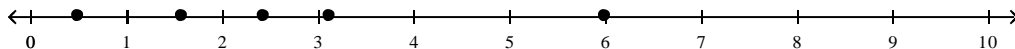
- A. 15.4
- B. 7.35
- C. 15.45
- D. 11.4

24. A chessboard is made of 64 small squares. Suppose a single square on a chessboard has an area of 10 square centimeters. How long is one side of the entire board, rounded to the nearest tenth of a centimeter?

- A. 3.2 cm
- B. 202.4 cm
- C. 25.3 cm
- D. 12.6 cm

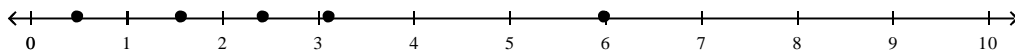
25. Graph the numbers $\sqrt{6}$, 1.6, $\sqrt{36}$, $\frac{1}{2}$, π on a number line. Then, order the numbers from least to greatest.

A.



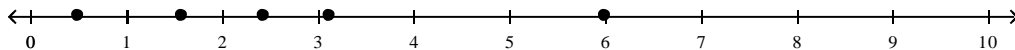
$\frac{1}{2}$, $\sqrt{6}$, $\sqrt{36}$, 1.6, π

B.



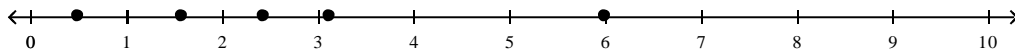
$\sqrt{36}$, π , $\sqrt{6}$, 1.6, $\frac{1}{2}$

C.



$\sqrt{36}$, $\sqrt{6}$, $\frac{1}{2}$, π , 1.6

D.



$\frac{1}{2}$, 1.6, $\sqrt{6}$, π , $\sqrt{36}$

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Answer Section

MULTIPLE CHOICE

1. ANS: A NAT: NT.CCSS.MTH.10.8.8.EE.1
2. ANS: C NAT: NT.CCSS.MTH.10.8.8.EE.1
3. ANS: A NAT: NT.CCSS.MTH.10.8.8.EE.1
4. ANS: B NAT: NT.CCSS.MTH.10.8.8.EE.1
5. ANS: B NAT: NT.CCSS.MTH.10.8.8.EE.1
6. ANS: B NAT: NT.CCSS.MTH.10.8.8.EE.4
7. ANS: A NAT: NT.CCSS.MTH.10.8.8.EE.4
8. ANS: D NAT: NT.CCSS.MTH.10.8.8.EE.3 | NT.CCSS.MTH.10.8.8.EE.4
9. ANS: B NAT: NT.CCSS.MTH.10.8.8.EE.4
10. ANS: C NAT: NT.CCSS.MTH.10.8.8.EE.4
11. ANS: B
 NAT: NT.CCSS.MTH.10.7.7.EE.3 | NT.CCSS.MTH.10.8.8.EE.3 | NT.CCSS.MTH.10.8.8.EE.4
12. ANS: B NAT: NT.CCSS.MTH.10.7.7.EE.3 | NT.CCSS.MTH.10.8.8.EE.4
13. ANS: A NAT: NT.CCSS.MTH.10.8.8.EE.2
14. ANS: C NAT: NT.CCSS.MTH.10.8.8.EE.2
15. ANS: D NAT: NT.CCSS.MTH.10.8.8.EE.2
16. ANS: D NAT: MCC.8.EE.2
17. ANS: A NAT: MCC.8.EE.2
18. ANS: B NAT: NT.CCSS.MTH.10.8.8.NS.1
19. ANS: A NAT: NT.CCSS.MTH.10.8.8.NS.1
20. ANS: D NAT: MCC.8.NS.1
21. ANS: B NAT: NT.CCSS.MTH.10.8.8.NS.2
22. ANS: A NAT: NT.CCSS.MTH.10.8.8.NS.2
23. ANS: D NAT: NT.CCSS.MTH.10.8.8.NS.2
24. ANS: C NAT: NT.CCSS.MTH.10.8.8.NS.2
25. ANS: D NAT: NT.CCSS.MTH.10.8.8.NS.2