NeSA Mathematics

Nebraska State Accountability

Grade 8
Mathematics
### Practice Test

Name:

1. **Use the diagram below to answer the question.**

9.7 cm

x cm

2.1 cm   3.4 cm
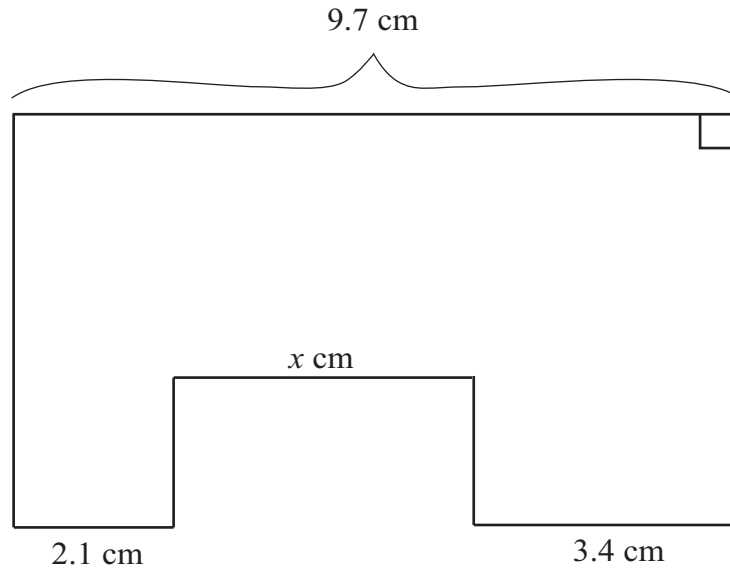
Which calculations could be used to find the missing value of *x*?

A.   add 2.1 and 3.4, then subtract the sum from 9.7

B.   add 9.7 and 3.4, then subtract 2.1 from the sum

C.   subtract 2.1 from 3.4, then subtract the difference from 9.7

D.   subtract 3.4 from 9.7, then add 2.1 to the difference

2. **Use the picture below to answer the question.**
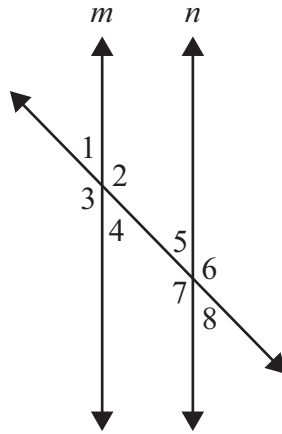
Line *m* and line *n* are parallel. Which pair of angles are alternate interior angles?

A. $\angle 2$ and $\angle 7$

B. $\angle 2$ and $\angle 5$

C. $\angle 2$ and $\angle 4$

D. $\angle 2$ and $\angle 3$

3. A muffin recipe calls for $\dfrac{1}{2} + \dfrac{2}{3}$ cups flour. The ingredients from the recipe will make 12 muffins. Which expression BEST estimates the number of cups of flour that will be needed to make 100 muffins?

A. 0.6×8

B. 0.6×10

C. 1.2×8

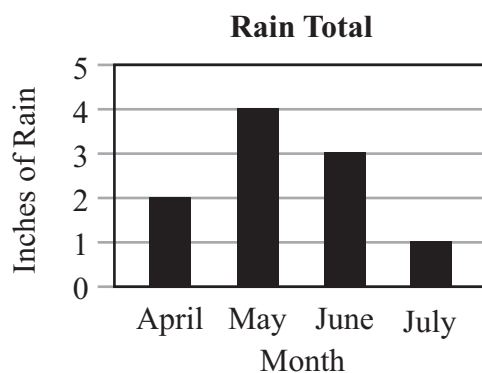D. 1.2×10

4. What is the solution for $11 - 3x < 4$?

   A. $x > -5$

   B. $x < -5$

   C. $x > 2\frac{1}{3}$

   D. $x < 2\frac{1}{3}$

5. **Use the graph below to answer the question.**

   Rain Total

   The bar graph shows the rain totals for a four-month period. It rained five inches in August. How does the inclusion of the total inches of rain in August affect the current range shown on the graph?

   A. decreases by 2
   B. stays the same
   C. increases by 1
   D. increases by 2

6. What is the value of the expression $4^2 + 3^3$?

    A. 17
    B. 25
    C. 35
    D. 43

7. Martha rolls a number cube with sides 1, 2, 3, 4, 5, and 6. What is the probability of NOT rolling a 3?

    A. $\dfrac{1}{36}$

    B. $\dfrac{1}{6}$

    C. $\dfrac{3}{6}$

    D. $\dfrac{5}{6}$

8. Which list shows the fractions in order from least to greatest?

    A. $\dfrac{1}{5}, \dfrac{1}{3}, \dfrac{3}{4}, \dfrac{2}{3}$

    B. $\dfrac{1}{5}, \dfrac{1}{3}, \dfrac{2}{3}, \dfrac{3}{4}$

    C. $\dfrac{1}{3}, \dfrac{2}{3}, \dfrac{3}{4}, \dfrac{1}{5}$

    D. $\dfrac{1}{3}, \dfrac{1}{5}, \dfrac{2}{3}, \dfrac{3}{4}$

9. Which number represents 3.6×10^{-3} in standard form?

    A. 0.0036

    B. 0.036

    C. 3,600

    D. 36,000

10. Which describes the relationship of $\angle A$ and $\angle B$ when $\angle A$ measures $50°$ and $\angle B$ measures $40°$?

    A. complementary angles

    B. obtuse angles

    C. supplementary angles

    D. vertical angles

11. Mark and his friends went to an amusement park. They bought 4 tickets that each cost the same amount (t). They paid \$12 to park the car. The total for all the tickets and the parking fee was \$112. Which equation represents the money Mark and his friends spent at the amusement park?

    A. $4(t + 12) = 112$

    B. $12t + 4 = 112$

    C. $12(t + 4) = 112$

    D. $4t + 12 = 112$

12. What is the value of x in $\dfrac{2}{3} = \dfrac{(3x+3)}{18}$?

    A. $x = 3$

    B. $x = 5$

    C. $x = 8$

    D. $x = 10$

13. Which is a correct classification of $\frac{3}{4}$?

    A.   integer number

    B.   natural number

    C.   rational number

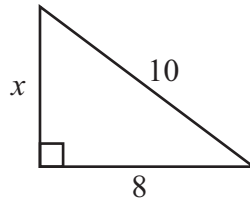   D.   whole number

14. What is the value of $0.4 + \frac{1}{4}$?

    A. $\frac{1}{8}$

    B.   0.29

    C. $\frac{13}{20}$

    D.   0.54

15. What is the value of $(42 - \left| -18 \right|)$?

    A.   −60

    B.   −24

    C.   24

    D.   60

16. Three vertices of a rectangle are at (1, 2), (5, 2), and (5, –1). What are the coordinates of the fourth vertex?

    A. (–1, 1)

    B. (1, –1)

    C. (1, 5)

    D. (2, –1)

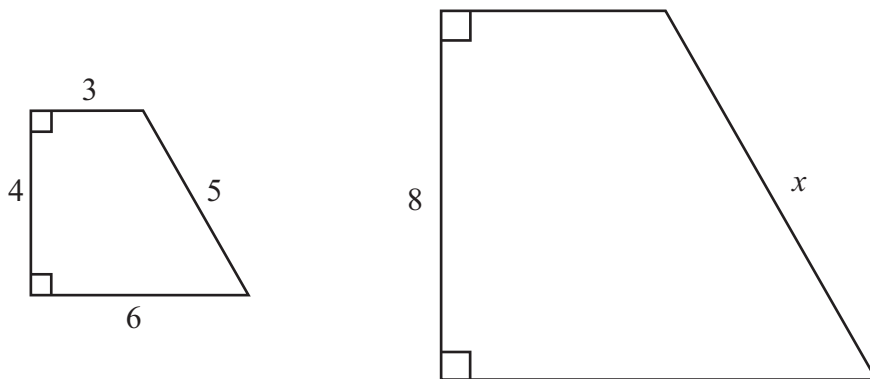17. **Use the triangle below to answer the question.**

    What is the value of the missing side, x?
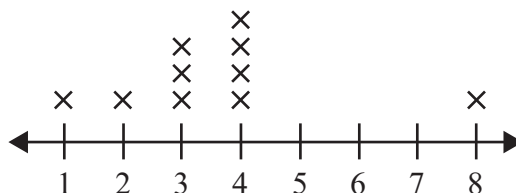
    A. 2

    B. 6

    C. 9

    D. 18

18. **Use the similar figures below to answer the question.**

What is the value of *x*?

A. 6

B. 9

C. 10

D. 12

19. **Use the line plot below to answer the question.**

The line plot shows a data set. Which comparison of the measures of central tendency is correct?

A. The mode is less than the mean.

B. The mode is less than the median.

C. The mean is greater than the median.

D. The mean is less than the median.
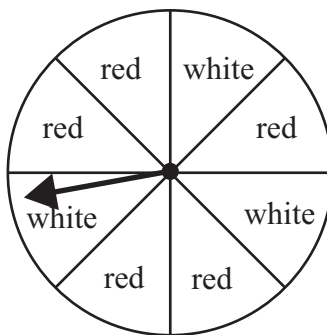
20. **Use the table below to answer the question.**

Table of Inputs/Outputs

Input (x)	Output (y)
1	5
2	7
3	9
4	11

Which equation is represented by the relationship of the values in the table?

A. $x + 3 = y$

B. $2x + 3 = y$

C. $x + 2 = y$

D. $2x + 2 = y$

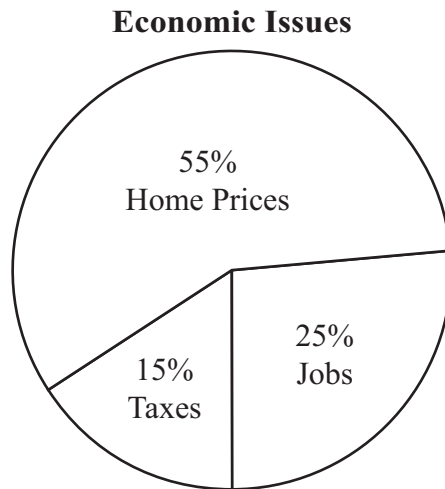21. **Use the spinner below to answer the question.**

Bethany spins the spinner two times. What is the probability of the arrow landing on red both times?

A. $\dfrac{9}{64}$

B. $\dfrac{25}{64}$

C. $\dfrac{10}{16}$

D. $\dfrac{10}{13}$

22. **Use the figure below to answer the question.**

Economic Issues

Carlos saw a circle graph of people's opinions on what the most important economic issues are and decided it must be a misrepresentation of the information. Which statement explains why Carlos is correct?

A. Only 15% of the people said taxes.

B. The percentages do not add to 100%.

C. The sections of the circle graph are not the same size.

D. More people selected home prices than taxes and jobs combined.

23. **Use the triangle below to answer the question.**
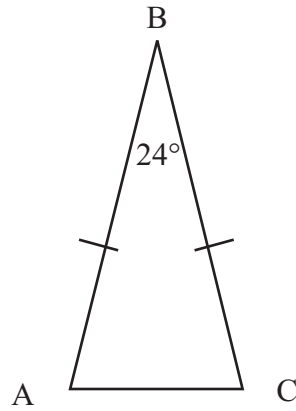
What is the measure of ∠A in the isosceles triangle?

A. 24°

B. 66°

C. 78°

D. 156°

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Answer Key

1	A
2	A
3	C
4	C
5	C
6	D
7	D
8	B
9	A
10	A
11	D
12	A
13	C
14	C
15	C
16	B
17	B
18	C
19	C
20	B
21	B
22	B
23	C