

# Tennessee Comprehensive Assessment Program TCAP

## Math Grade 7 | Practice Test



***Please PRINT all information in the box.***

Student Name: \_\_\_\_\_

Teacher Name: \_\_\_\_\_

School: \_\_\_\_\_

District: \_\_\_\_\_

**All practice test items represent the appropriate grade level/content standards—however, the practice test may contain item types that no longer appear on the operational assessment.**

## TCAP Math Reference Sheet—Grade 7

1 yard = 3 feet

1 mile = 1,760 yards

1 mile = 5,280 feet

1 kilometer = 1,000 m

1 pound = 16 ounces

1 ton = 2,000 pounds

1 kilogram = 1,000 grams

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 liter = 1,000 milliliters

Area of a Regular Polygon =  $\frac{1}{2} ap$

where  $a$  is the apothem length  
and  $p$  is perimeter



**1** Evaluate:

$$4\frac{2}{3} - \left(-1\frac{4}{5}\right)$$

**A.**  $-7\frac{2}{15}$

**B.**  $2\frac{13}{15}$

**C.**  $6\frac{7}{15}$

**D.**  $7\frac{2}{15}$

**2** Solve for  $m$ :

$$-\frac{2}{9}m + 12 = -8$$

Enter your answer in the space provided.



**3** While on a camping trip, Calvin was monitoring the temperature.

- In the afternoon, the temperature was  $-4^{\circ}\text{C}$ .
- As the evening progressed, the temperature dropped  $7^{\circ}\text{C}$ .
- By mid-morning the next day, the temperature had risen  $3^{\circ}\text{C}$ .

What was the temperature, in degrees Celsius, after these changes?

Enter your answer in the space provided.

**4** Select **all** the expressions that are equivalent to

$$-2(5x - 1) + 7(5x - 1) - 3(-5x + 1)$$

**M.**  $-10x - 1 + 35x - 1 + 15x + 1$

**P.**  $-10x + 2 + 35x - 7 - 15x - 3$

**R.**  $(5x - 1)(-2 + 7 - 3)$

**S.**  $(5x - 1)(-2 + 7 + 3)$

**T.**  $40x - 8$

**V.**  $10x + 2$



- 5 At a local gym, a random sample of 75 members took a survey about their favorite type of exercise.

### Gym Survey Results

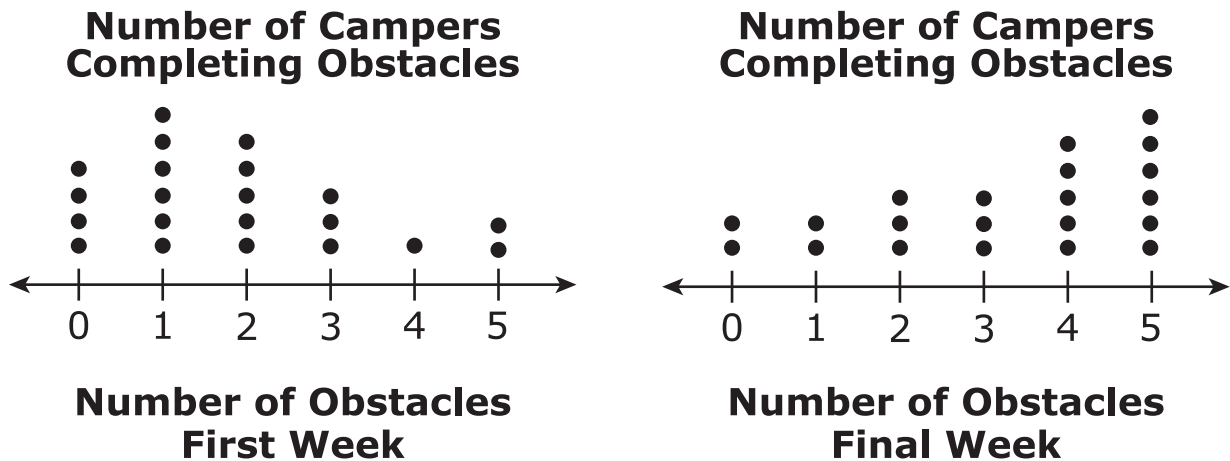
Type	Number of Members
Bicycling	18
Exercise Classes	22
Running on Treadmill	15
Weight Lifting	20

There are 350 total gym members. Based on the results of the survey, what is the **most** reasonable estimate for the number of gym members who prefer running on the treadmill?

- A. 15
- B. 70
- C. 85
- D. 93



- 6** There are 21 campers at a 3-week-long summer camp. During the camp, the counselors recorded the number of campers that could complete 5 different obstacles on the first and final week of camp. The dot plots show the data.



Which statement about the data is true?

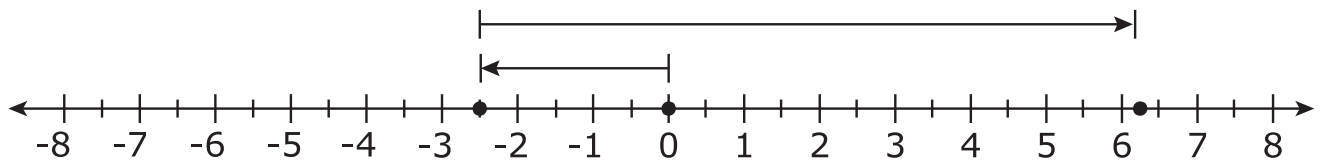
- M.** The number of campers who completed at least 3 obstacles increased by exactly 50% between the first week and the final week.
- P.** The median number of obstacles completed stays the same between the first week and the final week.
- R.** The mean number of obstacles completed increased between the first week and the final week.
- S.** The range of obstacles completed increased by 2 between the first week and the final week.



- 7** Ivan is painting 3 walls in his living room. Each wall measures  $9\frac{3}{4}$  feet tall by  $14\frac{1}{4}$  feet wide. Ivan needs to estimate the total area he will paint in order to determine the amount of paint to purchase. Which expression best represents the estimated area, in square feet, that Ivan will paint?
- A.**  $3(10) + 3(14)$
  - B.**  $3(10) \times 3(14)$
  - C.**  $3 + (10 \times 14)$
  - D.**  $3(10 \times 14)$
- 8** Which expression is equivalent to  $0.6x$ ?
- M.**  $x - 0.4x$
  - P.**  $1 - 0.4x$
  - R.**  $x + 0.6$
  - S.**  $0.6x - x$



- 9 Which situation is **best** described by this number line?



- A.** Ryder had \$6.25. He needs to buy school supplies and ends up owing his mother \$2.50.
- B.** Ryder owed his mom \$2.50. He does some chores and makes \$6.25.
- C.** Ryder owed his mom \$2.50. He babysits his sister and makes \$8.75.
- D.** Ryder owed his mom \$2.50. He also owes his father \$8.75.



**This is the end of Subpart 1 of the Math Practice Test.  
Do not go on to the next page until told to do so.**



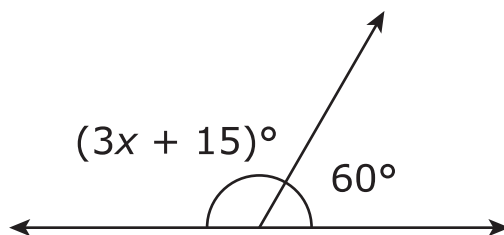


- 10** Terry has 15 candles. She needs at least 100 candles. The candles she wants are sold in boxes of 8.

What is the **least** number of boxes of 8 candles that Terry needs to buy?

Enter your answer in the space provided.

- 11** The angles shown are supplementary.



What is the value of  $x$ ?

- A.** 5
- B.** 15
- C.** 35
- D.** 120



**12** Select **all** of the expressions that are equivalent to  $\frac{2}{3}(9x + 6) - \frac{1}{2}(8x - 4)$ .

**M.**  $2(x + 1)$

**P.**  $2x + 6$

**R.**  $2x + 2$

**S.**  $2(x + 3)$

**T.**  $8x$



- 13** Marcus drew a scale drawing of the rectangular park in his neighborhood. On his drawing, the length of the park is 8 inches and the width of the park is 6 inches. The key on his drawing shows 1 inch = 20 feet. What is the actual area of the park?

**A.** 560 square feet  
**B.** 960 square feet  
**C.** 5,600 square feet  
**D.** 19,200 square feet

- 14** Shirts are on sale for 30% off. The original price of one shirt is \$15.

What is the total cost, in dollars, of 2 of these shirts at the sale price, including a 7% sales tax?

Enter your answer in the space provided.

- 15** Camilla spins a game spinner 1800 times. The spinner is divided into six equally spaced sections numbered 1–6.

Theoretically, how many times should she expect to spin a 2?



- 16** In the year 2010, the population of Kingsford was 8000. By 2014 the population had increased by 15% and  $\frac{2}{5}$  of the population was age 12 or under.

How many people in Kingsford were age 12 or under in the year 2014?

**M.** 1200

**P.** 3200

**R.** 3680

**S.** 5520

- 17** Select the **three** expressions that are equivalent to  $\frac{3}{5}a + 10$ .

**A.**  $\frac{1}{5}a + 10 + \frac{2}{5}a$

**B.**  $a\left(\frac{3}{5} + 10\right)$

**C.**  $14 + \frac{3}{5}a - 4$

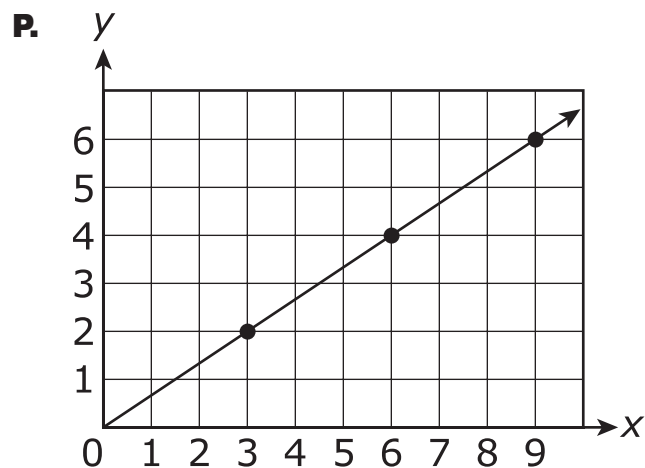
**D.**  $\frac{1}{5}(3a + 50)$

**E.**  $10 + \frac{2}{5}a - a + \frac{1}{5}a$

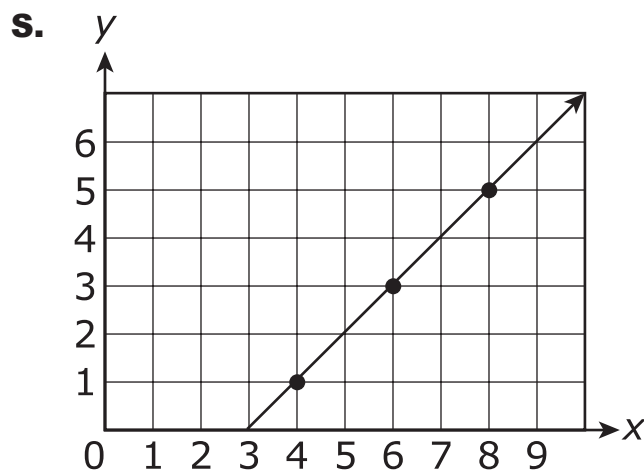


- 18** Which of the following represents a proportional relationship?  
Select **three** that apply.

**M.**  $y = x^2$

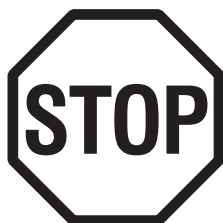


**R.**  $y = 2x$



**T.**

x	y
3	1
6	2
9	3
12	4



**This is the end of Subpart 2 of the Math Practice Test.  
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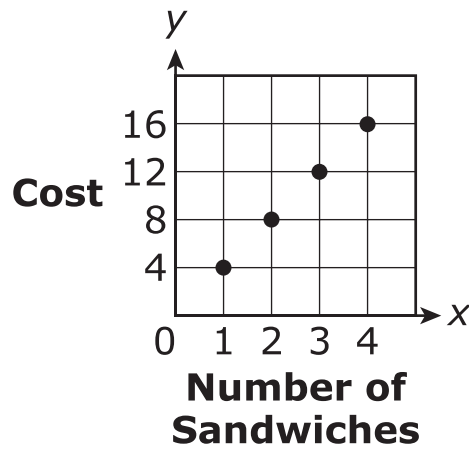


- 19** Jerry is mowing his lawn. It takes him  $\frac{1}{6}$  of an hour to mow  $\frac{3}{20}$  of his yard.  
What portion of the yard does Jerry mow per hour?

- A.**  $\frac{19}{60}$
- B.**  $\frac{9}{10}$
- C.**  $\frac{10}{9}$
- D.**  $\frac{10}{3}$



- 20** Use the information shown in the graph to answer Part A and Part B.



**Part A**

What is the cost, in dollars, of one sandwich?

Enter your answer in the space provided.

**Part B**

What is the meaning of the point (3, 12) on the graph?

- M.** For \$3 you can buy 3 sandwiches.
- P.** For \$3 you can buy 12 sandwiches.
- R.** For \$12 you can buy 3 sandwiches.
- S.** For \$12 you can buy 12 sandwiches.



21 Which expression is equivalent to  $\frac{12}{5}x - 2$ ?

A.  $\frac{12x - 2}{5}$

B.  $2\left(\frac{2}{5}x - 1\right)$

C.  $\frac{2}{5}(6x - 1)$

D.  $\frac{1}{5}(12x - 10)$

22 A recipe for 1 pumpkin pie calls for  $1\frac{1}{4}$  cups of sugar. Alana has only  $\frac{1}{2}$  cup of sugar and she needs to make 4 pumpkin pies.

How many **more** cups of sugar will Alana need to make all 4 pies?

Enter your answer in the space provided.





- 23** A cardboard box is shaped like a cube. The length of each side is 15 inches.

**Part A**

What is the **surface area** of the box, in square inches?

Enter your response in the space provided.

**Part B**

What is the **volume** of the box, in cubic inches?

Enter your response in the space provided.



- 24** Tom swam at a pool each day, for 5 days, during one week. The number of people at the pool when he arrived on each of those days is shown.

12, 19, 17, 26, 26

What is the mean number of people who were at the pool when Tom arrived on these days?

- M.** 14
- P.** 19
- R.** 20
- S.** 26

- 25** Last month, Karmin made \$480 working for 30 hours. This month, she will get a 15% increase in the amount she earns per hour.

What will be her hourly rate, in dollars, after the increase?

Enter your answer in the space provided.



- 26** Over the summer, Marty read 4 times as many pages as the number of pages Nelson and Jennifer read combined. Marty read 1,860 pages and Nelson read 240 pages.

**Part A**

Select an equation that could be solved to find the number of pages,  $p$ , Jennifer read.

- A.**  $1,860 + 240 = 4p$
- B.**  $4(240 + p) = 1,860$
- C.**  $1,860 - (960 \div 4) = p$
- D.**  $240 + 4p = 1,860$

**Part B**

How many pages did Jennifer read?

Enter your answer in the space provided.

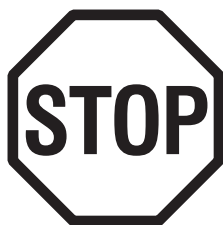


- 27** The program director at a botanical garden surveyed 75 of their annual members about the number of times they visit the gardens every month. The table shows the results of the survey.

Number of Visits Per Month	Number of Annual Members
0	2
1	8
2	27
3	14
4	9
5	12
6 or more	3

There are a total of 516 annual members. What is the best estimate for the number of annual members that will visit the botanical garden more than 3 times in the next month?

- M.** 24
- P.** 96
- R.** 165
- S.** 255



**This is the end of the test.**

## Subpart 1 Practice Test Questions

1. ☐ A ☐ B ☒ C ☐ D

2.

3.

4. ☐ M ☐ P ☐ R ☒ S ☒ T ☐ V (select **all**)

5. ☐ A ☒ B ☐ C ☐ D

6. ☐ M ☐ P ☒ R ☐ S

7. ☐ A ☐ B ☐ C ☒ D

8. ☒ A ☐ P ☐ R ☐ S

9. ☐ A ☐ B ☒ C ☐ D

## Subpart 2 Practice Test Questions

10.

11

11. ☐ A ☐ B ☒ C ☐ D12. ☐ M ☒ P ☐ R ☒ S ☐ T (select **all**)13. ☐ A ☐ B ☐ C ☒ D

14.

22.47

15.

300

16. ☐ M ☐ P ☒ R ☐ S17. ☒ A ☐ B ☒ C ☒ D ☐ E (select **three**)18. ☐ M ☒ P ☒ R ☐ S ☒ T (select **three**)

### Subpart 3 Practice Test Questions

19. ☐ A ☒ B ☐ C ☐ D

20. Part A:

4

Part B: ☐ M ☐ P ☒ R ☐ S

21. ☐ A ☐ B ☐ C ☒ D

22.

4.5 or  $4\frac{1}{2}$

23. Part A:

1350

Part B:

3375

24. ☐ M ☐ P ☒ R ☐ S

25.

18.40

26. Part A: ☐ A ☒ B ☐ C ☐ D

Part B:

225

27. ☐ M ☐ P ☒ R ☐ S

### TCAP Practice Test Standards Alignment and Key – Grade 7

Subpart 1	Key	Standard
1	C	7.NS.A.1d
2	90	7.EE.B.4a
3	-8	7.NS.A.3
4	S, T	7.EE.A.1
5	B	7.SP.A.2
6	R	7.SP.B.3
7	D	7.EE.B.3b
8	M	7.EE.A.1
9	C	7.NS.A.1b
<b>Subpart 2</b>		
10	11	7.EE.B.4b
11	C	7.G.B.4
12	P, S	7.EE.A.1
13	D	7.G.A.1
14	22.47	7.RP.A.3
15	300	7.SP.C.6
16	R	7.RP.A.3
17	A, C, D	7.EE.A.1
18	P, R, T	7.RP.A.2a
<b>Subpart 3</b>		
19	B	7.RP.A.1
20	4 ; R	7.RP.A.2d
21	D	7.EE.A.1
22	4.5 or $4\frac{1}{2}$	7.NS.A.3
23	1350 ; 3375	7.G.B.5
24	R	7.SP.D.8
25	18.40	7.RP.A.3
26	B ; 225	7.EE.B.4a
27	R	7.SP.A.2