

Review of Math 9

Multiple Choice

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

_____ 1. Which decimal has a square root between 14 and 15?

- i) 240.3
- ii) 169
- iii) 14.5
- iv) 204.5

A. ii B. iii C. i D. iv

_____ 2. Simplify, then evaluate.

$$(2^4 \times 2^2)^2$$

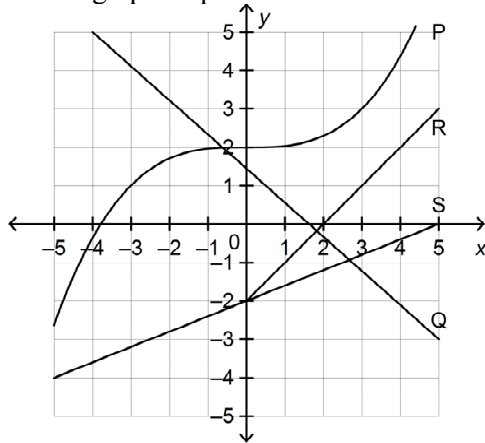
A. 1024 B. 65 536 C. 4096 D. 256

_____ 3. Identify the greatest rational number.

$$-\frac{9}{14}, \frac{5}{7}, -\frac{3}{4}, \frac{5}{8}$$

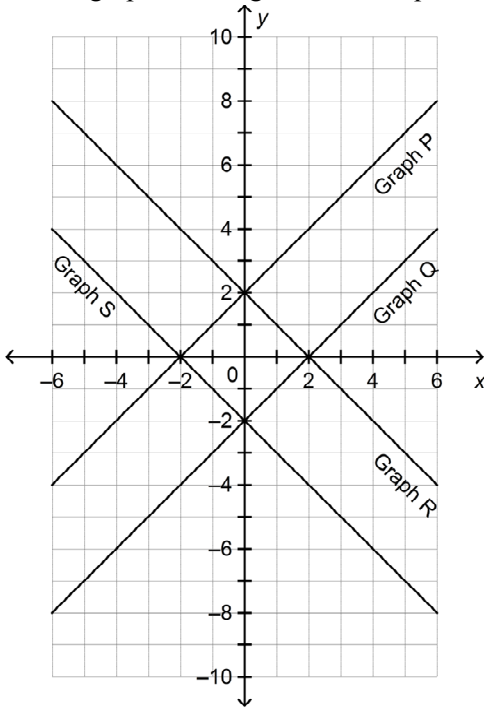
A. $\frac{5}{7}$ B. $\frac{5}{8}$ C. $-\frac{9}{14}$ D. $-\frac{3}{4}$

_____ 4. Which graphs represent a linear relation?



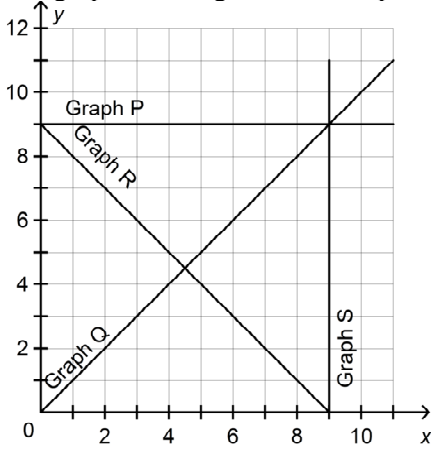
A. P and R C. Q and S
 B. Q, R, and S D. Q and R

5. Which graph on this grid has the equation $y = x - 2$?



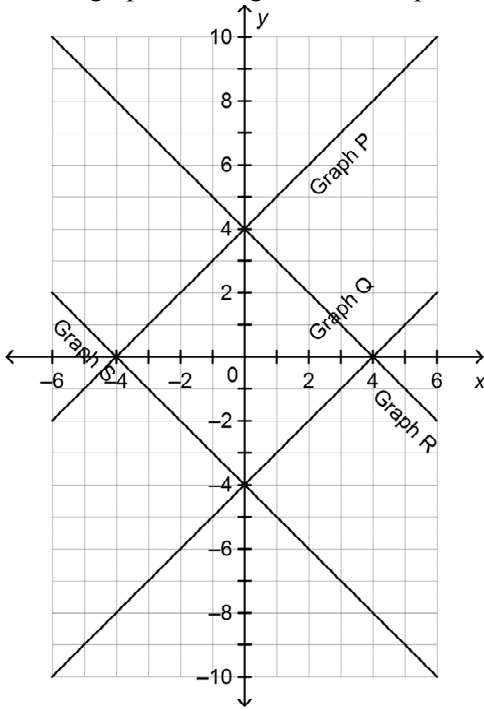
- A. Graph S B. Graph Q C. Graph P D. Graph R

6. Which graph on this grid has the equation $x = 9$?



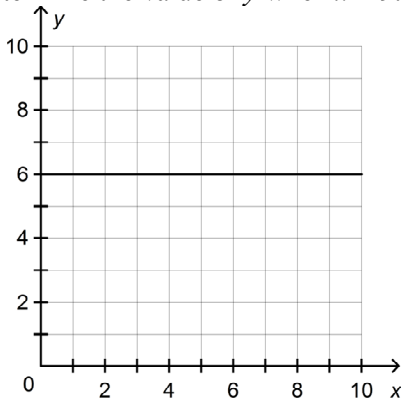
- A. Graph S B. Graph Q C. Graph R D. Graph P

7. Which graph on this grid has the equation $y = -x + 4$?



- A. Graph S B. Graph P C. Graph R D. Graph Q

8. This graph represents a linear relation. Determine the value of y when $x = 9$.



- A. 15 B. 6 C. 9 D. 0

9. Solve: $\frac{x}{7} - 3 = 5$

- A. 38 B. 56 C. 26 D. 1

Name: _____

ID: A

____ 10. Which of these numbers are between $\frac{4}{6}$ and $\frac{7}{5}$?

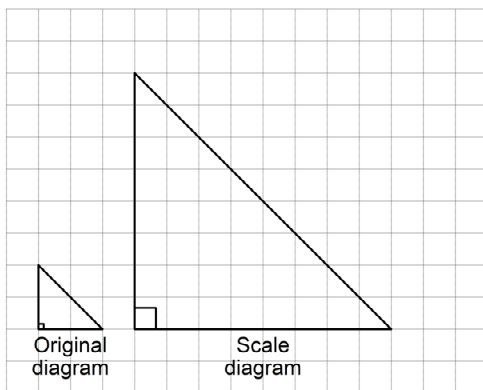
$$\frac{5}{6}, \frac{1}{5}, \frac{7}{8}, \frac{4}{5}$$

- A. $\frac{5}{6}$ and $\frac{7}{8}$ B. $\frac{5}{6}, \frac{7}{8},$ and $\frac{4}{5}$ C. $\frac{1}{5}$ and $\frac{7}{8}$ D. $\frac{5}{6}$ and $\frac{4}{5}$

____ 11. Solve: $4(x + 5) = 16$

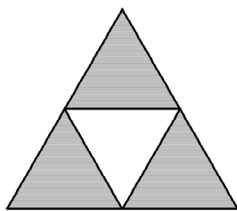
- A. 7 B. $\frac{11}{4}$ C. -1 D. -8

____ 12. Determine the scale factor for this scale diagram.



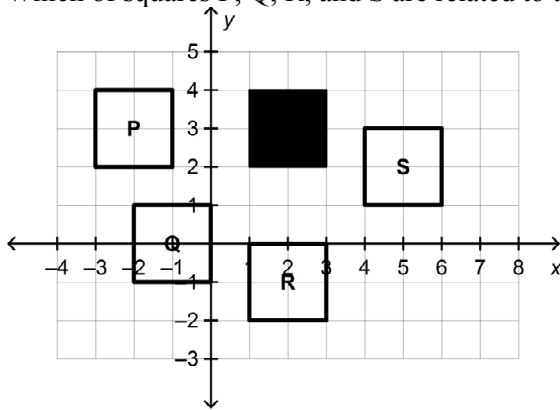
- A. 32 B. 8 C. 4 D. $\frac{1}{4}$

____ 13. What is the order of rotational symmetry and angle of rotation symmetry for this design?



- A. 3; 120° B. 5; 72° C. 4; 90° D. 3; 180°

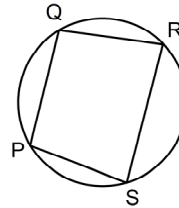
14. Which of squares P, Q, R, and S are related to the shaded square by line symmetry?



- A. Squares P, R, and S
- B. Squares P, Q, R, and S
- C. Squares P and R
- D. Squares P, Q, and R

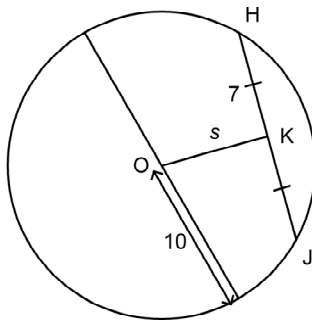
15. Which of the following constructions would enable you to determine the centre of this circle?

- i) Draw the perpendicular bisectors of PS and PQ.
- ii) Join PR and QS.
- iii) Join the mid-points of PS and QR and the mid-points of PQ and SR.



- A. i and iii
- B. iii
- C. i
- D. ii

16. O is the centre of the circle. Determine the value of s to the nearest tenth, if necessary.



- A. 3
- B. 7.1
- C. 12.2
- D. 51

- _____ 17. Leila arrives at the airport 3 hours before her flight to Chicago because each of the past 4 times she has travelled to the USA, it took her over 1.5 h to get through check-in and security.
Is her decision based on theoretical probability, experimental probability, or subjective judgment?
A. Subjective judgment
B. Experimental probability
C. A combination of theoretical probability and subjective judgment
D. Theoretical probability
- _____ 18. For a science project, groups of grade 9 students each analysed a sample of water from a local stream.
Group P collected samples every Monday morning before school.
Group Q collected samples at different times every Tuesday.
Group R collected samples before school on different days.
Group S collected samples at different times on different days
Which group will produce the most reliable information?
A. Group Q B. Group R C. Group P D. Group S
- _____ 19. A town council wants to know the public's opinion about increasing taxes to pay for more housing for the homeless. They hire people to conduct door-to-door interviews in randomly selected areas of town. Which sampling method did the town council use?
A. Self-selected sampling C. Systematic sampling
B. Simple random sampling D. Cluster sampling
- _____ 20. The owner of a large business wants to know if the employees would be interested in having a free fitness centre available for their use. She sends a memo to all employees, asking them to send their input to her assistant. Which sampling methods did she use?
A. Cluster sampling C. Systematic sampling
B. Simple random sampling D. Self-selected sampling

Short Answer

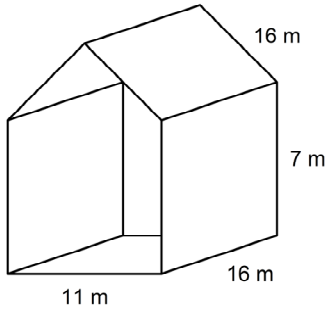
21. Simplify, then evaluate.

$$\left(\frac{2^2}{5^0}\right)^4$$

22. Determine this product.

$$(-17.5)(-19.2)$$

23. A shed is open at both ends. The walls and roof will be painted inside and outside. What is the area that needs to be painted?



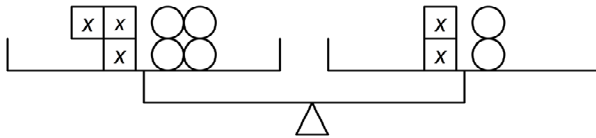
24. This is a partially completed table of values for a linear relation.
 a) Determine the missing values of y .

x	2	3	4	5	6
y			19	22	

- b) Write an equation that represents the linear relation.

25. Divide: $(15d^2 - 12d) \div (-3)$

26. Write the equation modelled by these balance scales. Solve the equation for x .



27. A student solved this equation: $3(2x - 5) = 7 - 3x$

$$3(2x - 5) = 7 - 3x$$

$$6x - 5 = 4x$$

$$6x - 5 + 5 = 4x + 5$$

$$6x = 4x + 5$$

$$6x - 4x = 4x + 5 - 4x$$

$$2x = 5$$

$$x = 2.5$$

Identify any errors the student made.

28. State whether you would reverse the inequality sign to solve each inequality.

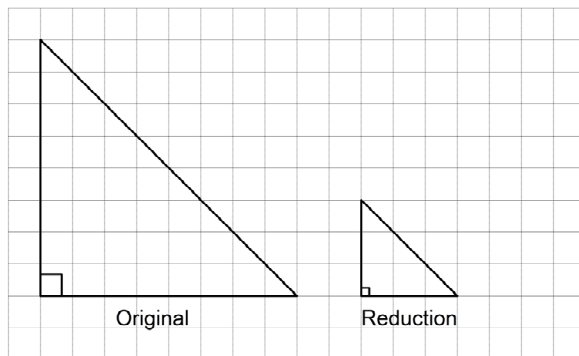
a) $6 < -x$

b) $2x \geq -4$

c) $\frac{x}{-4} < -5$

d) $\frac{-x}{3} > 9$

29. Determine the scale factor of this reduction as a fraction and as a decimal.



30. Sasha wanted to determine the average mass of a grade 9 students' backpack. During her gym class on Monday morning, she invited everyone in the class to weigh their backpacks. Will the selected sample represent the population?