

Name: _____ Class: _____ Date: _____

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Math 9 Midyear Review

Multiple Choice

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

- _____ 1. Determine the value of $\sqrt{0.04}$.
a. 0.02 b. 0.04 c. 0.2 d. 0.1
- _____ 2. Which numbers are rational numbers?
 $\frac{5}{7}$, 3.8, 0.6, $\frac{7}{5}$
a. $\frac{5}{7}$ and $\frac{7}{5}$ c. All of them
b. $\frac{5}{7}$ and 3.8 d. $\frac{5}{7}$, 3.8, and $\frac{7}{5}$
- _____ 3. Determine the value of $\sqrt{\frac{32}{50}}$.
a. $\frac{4}{5}$ b. $\frac{8}{5}$ c. $\frac{4}{10}$ d. $\frac{16}{25}$
- _____ 4. Evaluate: -5^4
a. -625 b. 20 c. -20 d. 625
- _____ 5. Evaluate: $4^3 - (-5)^3$
a. -3 b. 189 c. -61 d. 27

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6. Write the quotient of $\frac{6^8}{6^4}$ as a single power.

- a. 6^{12} b. 2 c. 6^2 d. 6^4

7. Simplify $m^{-3}n^5 \cdot m^4n^{-8}$. Write using powers with positive exponents.

- a. mn^3 b. $\frac{m}{n^3}$ c. $\frac{n^{13}}{m^7}$ d. $\frac{n^3}{m}$

8. Evaluate: $(-2)^3 \times (-2)^5 \div (-2)^0$

- a. 256 b. -128 c. -32 768 d. -256

9. Evaluate 6^{-2} without using a calculator.

- a. $\sqrt{6}$ b. $\frac{1}{12}$ c. $\frac{1}{36}$ d. -36

10. Evaluate $\left(\frac{8}{11}\right)^{-3}$.

- a. $\frac{1331}{512}$ b. $\frac{512}{1331}$ c. $\frac{1331}{512}$ d. $\frac{1}{24}$

11. Simplify $\frac{16p^4q^{-8}}{28pq^7}$. Write using powers with positive exponents.
- a. $\frac{4p^4}{7q^{15}}$ b. $\frac{p^3}{12q^{15}}$ c. $\frac{4p^3}{7q}$ d. $\frac{4p^3}{7q^{15}}$
12. A student first borrowed \$44.75, then borrowed another \$18.75 from his father. He then paid back \$19.25. How much does he still owe his father?
- a. \$44.25 b. \$26.00 c. \$6.75 d. \$45.25
13. Yesterday, the temperature of a freezer was -5.9°C . When the technician checked the freezer today, its temperature had decreased by 9.3°C . Determine the temperature of the freezer today.
- a. -3.4°C b. -15.2°C c. 3.4°C d. 15.2°C
14. Which expressions have the same answer as $-2\frac{2}{3} - (-8)$?
- i) $8 + 2\frac{2}{3}$
ii) $-8 + 2\frac{2}{3}$
iii) $-2\frac{2}{3} + 8$
iv) $8 - 2\frac{2}{3}$
- a. i and iii b. i and ii c. iii and iv d. ii and iv

_____ 15. Which quotients are less than 0?

i) $\left(\frac{-6}{7}\right) \div \left(\frac{8}{-7}\right)$

ii) $\left(\frac{-6}{7}\right) \div \left(\frac{8}{7}\right)$

iii) $\left(\frac{-6}{-7}\right) \div \left(\frac{-8}{7}\right)$

iv) $\left(\frac{-6}{7}\right) \div \left(\frac{-8}{-7}\right)$

a. i and iv

b. i and iii

c. ii and iii

d. ii and iv

_____ 16. Which quotients are less than -1?

i) $\left(\frac{-1}{9}\right) \div \frac{1}{8}$

ii) $\left(\frac{-1}{8}\right) \div \frac{1}{9}$

iii) $\frac{1}{9} \div \left(\frac{-1}{8}\right)$

iv) $\frac{1}{8} \div \left(\frac{-1}{9}\right)$

a. i and iii

b. ii and iv

c. i and ii

d. iii and iv

_____ 17. Add: $\frac{3}{4} + \frac{5}{9}$

a. $\frac{8}{13}$

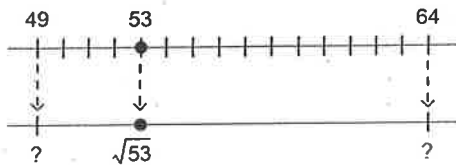
b. $\frac{2}{9}$

c. $\frac{47}{13}$

d. $\frac{47}{36}$

18. Subtract: $\frac{2}{3} - \frac{1}{6}$
- a. $\frac{1}{6}$ b. $\frac{1}{9}$ c. $\frac{1}{2}$ d. $\frac{1}{3}$
19. Add.
 $(-10) + (-7)$
- a. -3 b. -17 c. 3 d. 17
20. Replace \square with an integer to make the equation true.
 $(-9) - \square = -8$
- a. -1 b. 17 c. -17 d. 1

21. Between which 2 consecutive whole numbers is $\sqrt{53}$?



- a. 52 and 54 b. 49 and 64 c. 7 and 8 d. 6 and 7
22. What is the least whole number greater than $\sqrt{67}$?
- a. 8 b. 35 c. 9 d. 18

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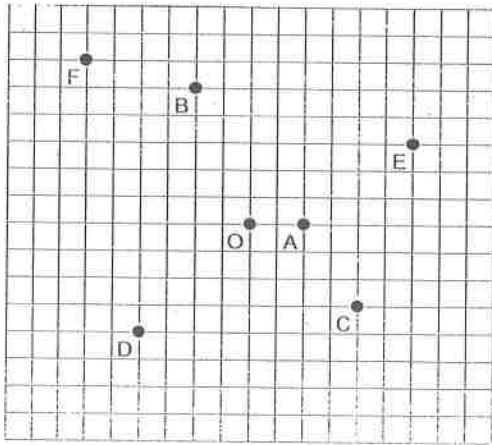
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23. Simplify this fraction. $\frac{4 \times 15}{5 \times 20}$
- a. $\frac{19}{25}$ b. $\frac{3}{5}$ c. $\frac{2}{3}$ d. $\frac{19}{100}$

24. Divide. $\frac{+24}{-3}$
- a. +21 b. +27 c. +8 d. -8

25. The legs of a right triangle measure 9 cm and 6 cm.
What is the length of the hypotenuse?
- a. 117 cm b. $\sqrt{117}$ cm c. 225 cm d. 15 cm

26. Which point is $\sqrt{32}$ units from O?



- a. E b. C c. D d. A

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27. Find a square root of 100.
a. 50 b. 12 c. 25 d. 10
28. In the equation $P = 6n + 4$, determine the value of P when $n = 15$.
a. 25 b. 114 c. 84 d. 94
29. The cost to print stickers is \$6.55, plus \$0.55 per sticker.
Determine an equation that relates the total cost, C dollars, to the number of stickers, s .
a. $C = 7.1s$ b. $C = 6.55 + 0.55s$ c. $C = 0.55s$ d. $C = 6.55 + s$
30. The cost to rent a piece of equipment is \$27, plus \$6.27 per hour.
Calculate the cost of renting the equipment for 8 h.
a. \$41.27 b. \$266.16 c. \$1354.32 d. \$77.16

- _____ 35. Ming invests \$5,600 at 4.9% for 5 years. How much will Ming have in his account at the end using simple interest?
- a. \$1372 b. \$6972 c. \$4228 d. \$7113
- _____ 36. Heidi borrows \$4,850 at 6.2% for 7 years. How much interest will Heidi owe the bank at the end using simple interest?
- a. \$2745.10 b. \$6954.90 c. \$2104.90 d. \$7389.47
- _____ 37. Tim is trying to invest money at the bank. The bank offers him Option A: 4.7% interest compounded quarterly, or Option B: 4.7% interest compounded semi-annually, which option should he choose and why?
- a. Option A because it has fewer compounding periods per year, which gives a bigger final amount
b. Option B because it has fewer compounding periods per year, which gives a bigger final amount
c. Option A because it has more compounding periods per year, which gives a bigger final amount
d. Option B because it has more compounding periods per year, which gives a bigger final amount
- _____ 38. Ingrid sells gardening tools. She makes \$16 per hour and earns 3% commission on monthly sales less than \$8,000 and 4% commission on monthly sales over \$8,000. One month, she works 180 hours and sells \$12,000 of equipment. What is her gross pay?
- a. \$3240 b. \$3360 c. \$3280 d. \$14,880

Short Answer

39. Which rational number is greater?
 $-1.7, -1.\overline{7}$

40. Insert $<$, $>$, or $=$ to make each expression true.

a) $-\frac{18}{5} \square -\frac{11}{3}$

b) $3\frac{3}{5} \square 3\frac{7}{12}$

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Problem

41. Write these numbers in order from least to greatest. Justify your answer.

$$\sqrt{\frac{14.5}{3}}, \sqrt{\frac{13.5}{4}}, \sqrt{4.1}, \sqrt{3.7}$$

42. Simplify, then evaluate. Show your work.

$$\frac{12^6 \times 12^3}{6^2 \times 6^7}$$