

MTH 05, Test 1, V. 4, 09/27/18

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NAME: _____

There are 20 questions. The 14 multiple choice are worth 5 points each; the 6 free response are worth 6 points each. For multiple-choice questions, circle your answer. For free-response questions, SHOW ALL WORK to receive full credit.

1. Solve: $3(7x + 1) = 4(5x + 1) + 14$

(a) $x = \frac{9}{20}$

(b) $x = -13$

(c) $x = \frac{21}{41}$

(d) $x = 15$

2. Evaluate $\frac{6 - 5xy}{2x + y}$ when $x = 3$ and $y = -4$.

(a) 30

(b) $-\frac{6}{5}$

(c) 33

(d) -33

3. Find the value of: $2(3^2 \cdot 5 - 4^2)$.

(a) 58

(b) 122

(c) -35

(d) 28

4. Add: $\frac{7}{9} + \frac{5}{12} =$

(a) $\frac{31}{12}$

(b) $\frac{43}{36}$

(c) $\frac{13}{3}$

(d) $\frac{12}{21}$

5. Evaluate: $-8^2 - \frac{3}{7} \cdot 14 =$

- (a) -70
- (b) -65
- (c) 58
- (d) 70

6. Solve $\frac{x}{3} + 5 = 7$

- (a) -4
- (b) $x = \frac{2}{3}$
- (c) $x = 6$
- (d) No solution

7. Write the following sentence in symbols:
twice the sum of c and d is 5.

- (a) $2c + d = 5$
- (b) $2 + c + d = 5$
- (c) $2d + c = 5$
- (d) $2(c + d) = 5$

8. Solve: $\frac{x - 4}{3} = \frac{4}{5}$

- (a) $x = 4$
- (b) $x = -\frac{11}{4}$
- (c) $x = \frac{32}{5}$
- (d) $x = \frac{16}{5}$

9. Evaluate: $-\frac{35}{6} \div \frac{14}{9}$

(a) $-\frac{13}{54}$

(b) $-\frac{15}{4}$

(c) $-\frac{77}{18}$

(d) $-\frac{245}{27}$

10. Evaluate: $\left(-\frac{10}{9}\right)\left(-\frac{6}{25}\right)$

(a) $\frac{4}{15}$

(b) $-\frac{60}{131}$

(c) $\frac{125}{18}$

(d) $-\frac{4}{15}$

11. Evaluate $g(2)$ for the function
 $g(x) = 3x^2 - 4x + 2$

(a) -4

(b) 6

(c) 30

(d) 2

12. Evaluate exactly $-b + \sqrt{b^2 - 4ac}$
when $a = 3$, $b = 5$, $c = (-2)$.

(a) $-5 + \sqrt{30}$

(b) -4

(c) -2

(d) 2

13. Ten more than twice a number is 46.
What is the number?

- (a) 29
- (b) 18
- (c) 34
- (d) 5

14. Solve the equation $9x - 5 = 5x + 7$.

- (a) $x = -5$
- (b) $x = \frac{21}{2}$
- (c) $x = 3$
- (d) $x = 4$

Free response questions start here. SHOW ALL WORK!!!

15. Evaluate: $\sqrt{36} + (-4)^2 =$

16. Solve the equation: $\frac{2x}{5} + \frac{7}{6} = \frac{x}{3} - 2$

17. Evaluate: $\frac{4}{5} - \frac{2}{7} \div \frac{5}{14} =$

18. Solve $5(x + 2) = 2x - 7$

19. Twice a number minus 7 is equal to the same number plus 3. What is the number?

20. Solve $-5x + 1 = 17 - x$