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.**

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

(a) -70

(b) 58

(c) 70

(d) -65

2. Add: $\dfrac{7}{9} + \dfrac{5}{12} =$

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

(b) $\dfrac{13}{3}$

(c) $\dfrac{12}{21}$

(d) $\dfrac{43}{36}$

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

(a) $x = -5$

(b) $x = 3$

(c) $x = 4$

(d) $x = \dfrac{21}{2}$

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

(a) $2c + d = 5$

(b) $2d + c = 5$

(c) $2(c + d) = 5$

(d) $2 + c + d = 5$

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

(a) 58

(b) -35

(c) 28

(d) 122

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

(a) 30

(b) 33

(c) -33

(d) $-\dfrac{6}{5}$

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

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

(b) $x = \dfrac{21}{41}$

(c) $x = 15$

(d) $x = -13$

8. Solve $\dfrac{x}{3} + 5 = 7$

(a) -4

(b) $x = 6$

(c) No solution

(d) $x = \dfrac{2}{3}$

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

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

(b) $\dfrac{125}{18}$

(c) $-\dfrac{4}{15}$

(d) $-\dfrac{60}{131}$

10. Solve: $\dfrac{x-4}{3} = \dfrac{4}{5}$

(a) $x = 4$

(b) $x = \dfrac{32}{5}$

(c) $x = \dfrac{16}{5}$

(d) $x = -\dfrac{11}{4}$

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

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

(b) $-\dfrac{77}{18}$

(c) $-\dfrac{245}{27}$

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

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

(a) 29

(b) 34

(c) 5

(d) 18

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

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

(b) -2

(c) 2

(d) -4

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

(a) -4

(b) 30

(c) 2

(d) 6

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

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

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

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

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

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

20. Evaluate: $\dfrac{4}{5} - \dfrac{2}{7} \div \dfrac{5}{14} =$