Review of Operations, Expressions and Solving Equations

Order of Operations

1. $8 \times 3 \div 6 \times 2 - 7$

   $24 \div 6 \times 2 - 7$

   $4 \times 2 - 7$

   $8 - 7 = \boxed{1}$

2. $18 + 11 - 8 \times 9 \div 4$

   $18 + 11 - 72 \div 4$

   $18 + 11 - 18$

   $29 - 18 = \boxed{11}$

   $4\overline{)72}$ quotient 18

   $\underline{-4}$

   32

3. $4 \times (15 - (28 \div 7)) - 9$

   $4 \times (15 - (4)) - 9$

   $4 \times 11 - 9$

   $44 - 9 = \boxed{35}$

4. $((2 \times 7) - (54 \div 9)) \times 6$

   $(14 - 6) \times 6$

   $8 \times 6 = \boxed{48}$

5. $((15 + 12) - (9 \times 3)) \times 5$

   $= (27 - 27) \times 5$

   $= 0 \times 5$

   $= \boxed{0}$

6. $(6 \times 8) + ((108 + 36) \div 3)$

   $48 + (144 \div 3)$

   $48 + 48$

   $\boxed{96}$

   $3\overline{)144}$ quotient 48

   $\underline{-12}$

   24

7. $3 \times (13 \times 5 + 7^2) - 16 \times 4$

   $3 \times (13 \times 5 + 49) - 16 \times 4$

   $3 \times (65 + 49) - 16 \times 4$

   $3 \times 114 - 16 \times 4$

   $342 - 64 = \boxed{278}$

8. $(33 - 19) \times (60 \div 15) + 5^2$

   $14 \times 4 + 25$

   $56 + 25$

   $\boxed{81}$

9. $((5+1)^2 - (72 \div 3)) \times 17$

   $(6^2 - 24) \times 17$

   $(36 - 24) \times 17$

   $12 \times 17 = \boxed{204}$

   $3\overline{)72}$ quotient 24

   $\underline{-6}$

   12

10. $9 + (4 \times (17 - 6)^2) - 84$

    $9 + (4 \times (11)^2) - 84$

    $9 + (4 \times 121) - 84$

    $9 + 484 - 84$

    $\boxed{409}$

Simplify and Evaluate Expressions

11. -46 + 82c + 101 - 375c

$$\boxed{55 - 293c \;\;\text{(OR)}\;\; -293c + 55}$$

12. 12x - 40 - 37x

$$\boxed{-25x - 40}$$

13. 99 - (52y-8)

99 - 52y + 8

$$\boxed{107 - 52y}$$

14. 6(13 - 9n) - 5(7n-5)

78 - 54n - 35n + 25

$$\boxed{-89n + 103}$$

15. -3(8b + 12 - b) - 10(4 - 5b)

-24b - 36 + 3b - 40 + 50b

$$\boxed{29b - 40}$$

16. w ÷ 3 + x × 5y   use w = 33, y = 4, x = -2

33 ÷ 3 + -2 × 5(4)

11 + -2 × 5(4) → 11 + -40

11 + -10 × 4

$$\boxed{-29}$$

17. a - b²   use a = 14, b = 7

14 - 49 = $\boxed{-35}$

18. c³(d + m ÷ 2)   use c = 3, d = 18, m = 4

$3^3(18 + 4 \div 2)$ → 27(20)

27(18 + 2)

$$\boxed{540}$$

19. pq² ÷ 3   use p = 2, q = 9

$2(9)^2 \div 3$

$2(81) \div 3 = \boxed{54}$

20. 2d - f + ef ÷ 4   use d = 5, f = 3, e = 16

2(5) - 3 + 16(3) ÷ 4

10 - 3 + 48 ÷ 4

10 - 3 + 12 = 7 + 12 = $\boxed{19}$

21. (h - k)² + (2h - 5)   use h = 13, k = 8

$(13-8)^2 + (2 \cdot 13 - 5)$ → 25 + 21

$5^2 + (26 - 5)$ $\boxed{46}$

22. w(8v + 3y)   use v = -1, w = 6, y = 6

$6(8 \cdot -1 + 3(6))$ → 6(10) = $\boxed{60}$

6(-8 + 18)

23. f(g² - 3f)   use f = 20, g = 19

$20(19^2 - 3(20))$

20(361 - 60) = 20(301) = $\boxed{6020}$

24. 5 + 2(7j - k) + m ÷ 2   use m = 6, k = 5, j = -1

5 + 2(7(-1) - 5) + 6 ÷ 2

5 + 2(-12) + 6 ÷ 2

5 - 24 + 3 → $\boxed{-16}$

25. (5a² +b) ÷ 2 - a + 4   use a = -4, b = 12

$(5(-4)^2 + 12) \div 2 - (-4) + 4$

(5(16) + 12) ÷ 2 + 4 + 4

(80 + 12) ÷ 2 + 4 + 4

92 ÷ 2 + 4 + 4

46 + 4 + 4 = $\boxed{54}$

Solve Equations

26. $z + 7 = 13$

$z = 6$

27. $4 = 19 + a$

$a = -15$

28. $-71 + r = 36$

$r = 107$

29. $s - 52 = 25$

$s = 77$

30. $11h = 143$

$h = 13$

31. $-6b = -54$

$b = 9$

32. $210r = -8400$

$r = -40$

33. $c \div 7 = 3$

$c = 21$

34. $u \div (-9) = 40$

$u = -360$

$u = -360$

35. $-m \div 3 = -104$

$\dfrac{-m}{3} = -104$

$-m = -312$

$m = 312$

36. $5(m + 2n) - 3p = 4$ use m = 6, n = 4

$5(6 + 2(4)) - 3p = 4 \rightarrow 70 - 3p = 4$
$5(14) - 3p = 4 \qquad \dfrac{-3p}{-3} = \dfrac{-66}{-3}$

$\boxed{p = 22}$

37. $(9r + u \div 2) - (2r - 7s) = 3r$ use s = 8, u = 40

$(9r + 40 \div 2) - 2r - 7(8) = 3r$

$9r + 20 - 2r - 56 = 3r$

$7r + 20 - 56 = 3r$

$7r - 36 = 3r$
$-7r \qquad\qquad -7r$

$\dfrac{-36}{-4} = \dfrac{-4r}{-4}$

$\boxed{r = 9}$