

Name: Key  
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 Date: \_\_\_\_\_

### Review of Operations, Expressions and Solving Equations

#### Order of Operations

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

$$\begin{aligned} &24 \div 6 \times 2 - 7 \\ &4 \times 2 - 7 \\ &8 - 7 = \boxed{1} \end{aligned}$$

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

$$\begin{aligned} &18 + 11 - 72 \div 4 \\ &18 + 11 - 18 \\ &29 - 18 = \boxed{11} \end{aligned}$$

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

$$\begin{aligned} &4 \times (15 - (4)) - 9 \\ &4 \times 11 - 9 \\ &44 - 9 = \boxed{35} \end{aligned}$$

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

$$\begin{aligned} &(14 - 6) \times 6 \\ &8 \times 6 = \boxed{48} \end{aligned}$$

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

$$\begin{aligned} &-(27 - 27) \times 5 \\ &= 0 \times 5 \\ &= \boxed{0} \end{aligned}$$

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

$$\begin{aligned} &48 + (144 \div 3) \\ &48 + 48 \\ &\boxed{96} \end{aligned}$$

$$\begin{array}{r} 48 \\ 3 \overline{)144} \\ \underline{-12} \\ 24 \end{array}$$

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

$$\begin{aligned} &3 \times (13 \times 5 + 49) - 16 \times 4 \\ &3 \times (65 + 49) - 16 \times 4 \\ &3 \times 114 - 16 \times 4 \\ &342 - 64 = \boxed{278} \end{aligned}$$

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

$$\begin{aligned} &14 \times 4 + 25 \\ &56 + 25 \\ &\boxed{81} \end{aligned}$$

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

$$\begin{aligned} &(6^2 - 24) \times 17 \\ &(36 - 24) \times 17 \\ &12 \times 17 = \boxed{204} \end{aligned}$$

$$\begin{array}{r} 24 \\ 3 \overline{)72} \\ \underline{-6} \\ 12 \end{array}$$

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

$$\begin{aligned} &9 + (4 \times (11)^2) - 84 \\ &9 + (4 \times 121) - 84 \\ &9 + 484 - 84 \\ &\boxed{409} \end{aligned}$$

Simplify and Evaluate Expressions

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

$$\boxed{55 - 293c} \quad (62)$$

$$-293c + 55$$

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

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

$$\boxed{26b - 40}$$

16.  $w \div 3 + x \times 5y$  use  $w=33, y=4, x=-2$

$$33 \div 3 + -2 \times 5(4)$$

$$11 + -2 \times 5(4) \rightarrow 11 + -40$$

$$11 + -10 \times 4 \rightarrow \boxed{-29}$$

17.  $a - b^2$  use  $a=14, b=7$

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

18.  $c^3(d + m \div 2)$  use  $c=3, d=18, m=4$

$$3^3(18 + 4 \div 2) \rightarrow 27(20)$$

$$27(18 + 2) \rightarrow \boxed{540}$$

19.  $pq^2 \div 3$  use  $p=2, q=9$

$$2(9)^2 \div 3$$

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

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

$$2(5) - 3 + 16(3) \div 4$$

$$10 - 3 + 48 \div 4$$

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

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

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

$$5^2 + (26 - 5) \rightarrow \boxed{36}$$

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

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

$$6(-8 + 18)$$

23.  $f(g^2 - 3f)$  use  $f=20, g=19$

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

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

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

$$5 + 2(7(-1) - 5) + 6 \div 2$$

$$5 + 2(-12) + 6 \div 2$$

$$5 - 24 + 3 \rightarrow \boxed{-16}$$

25.  $(5a^2 + b) \div 2 - a + 4$  use  $a=-4, b=12$

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

$$(5(16) + 12) \div 2 + 4 + 4$$

$$(80 + 12) \div 2 + 4 + 4$$

$$92 \div 2 + 4 + 4$$

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

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

~~$u = 40$~~

$u = -360$

$u = -360$

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

$\frac{-m}{3} = -104$   
 $-m = -312$

$m = 312$

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

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

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

$p = 22$

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

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

$7r + 20 - 56 = 3r$

$\frac{7r}{-7r} - 36 = \frac{3r}{-7r}$

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

$r = 9$