

Warm up

Evaluate.

1) $-1 + (-13) =$

$$\textcircled{-14}$$

2) $6(-9) =$

$$\textcircled{-54}$$

3) $-12 - (-14) =$

$$\begin{array}{l} -12 + 14 \\ \textcircled{2} \end{array}$$

4) $\frac{-4 + (-2)}{-3} =$

$$\frac{-6}{-3} = \textcircled{2}$$

Order of Operations

P *arentheses / Grouping* $\{ \} []$
 E *xponents* $\frac{\quad}{\quad}$
 M *ultiplication* $\left. \begin{array}{l} \text{M} \\ \text{D} \\ \text{A} \\ \text{S} \end{array} \right\}$ @ the same time $L \rightarrow R$
 D *ivision*
 A *ddition*
 S *ubtraction* @ the same time $L \rightarrow R$

$$7 + |2 - 5|$$

$$5 - 2 + 7$$

$$3 + 7$$

$$\textcircled{10}$$

Something to remember about exponents...

$$-4^2 \neq (-4)^2$$

Handwritten annotations in blue ink:

- Under -4^2 , a minus sign is written to the left of (4^2) , and -16 is circled below.
- Under $(-4)^2$, $(-4)(-4)$ is written, and 16 is circled below.
- A vertical blue line separates the two expressions.

$$-7^2 = -49$$

$$(-2)^3 = (-2)(-2)(-2) = -8$$

$$(-10)^2 = 100$$

$$-2^3 = -8$$

$$-2^2 = -4$$

$$(-5^2) = -25$$

$$(-5)^2 = 25$$

$$-5^2$$

$$\begin{aligned} & 5 - 2(6-10)^2 \\ & 5 - 2(-4)^2 \\ & 5 - 2(16) \\ & 5 - 32 \\ & \textcircled{-27} \end{aligned}$$

$$7 - |6 - 8| \div 2$$

$$7 - |-2| \div 2$$

$$7 - 2 \div 2$$

$$7 - 1$$

$$\textcircled{6}$$

$$\frac{2+7^2}{3^2-3(2)} = \frac{2+49}{9-6} = \frac{51}{3} = 17$$

$$\underline{(28 \div 2^2 \cdot 3 \div 7 - (-5)) - (2^3 - 3^2)}$$

$$(28 \div 4 \cdot 3 \div 7 - (-5)) - (8 - 9)$$

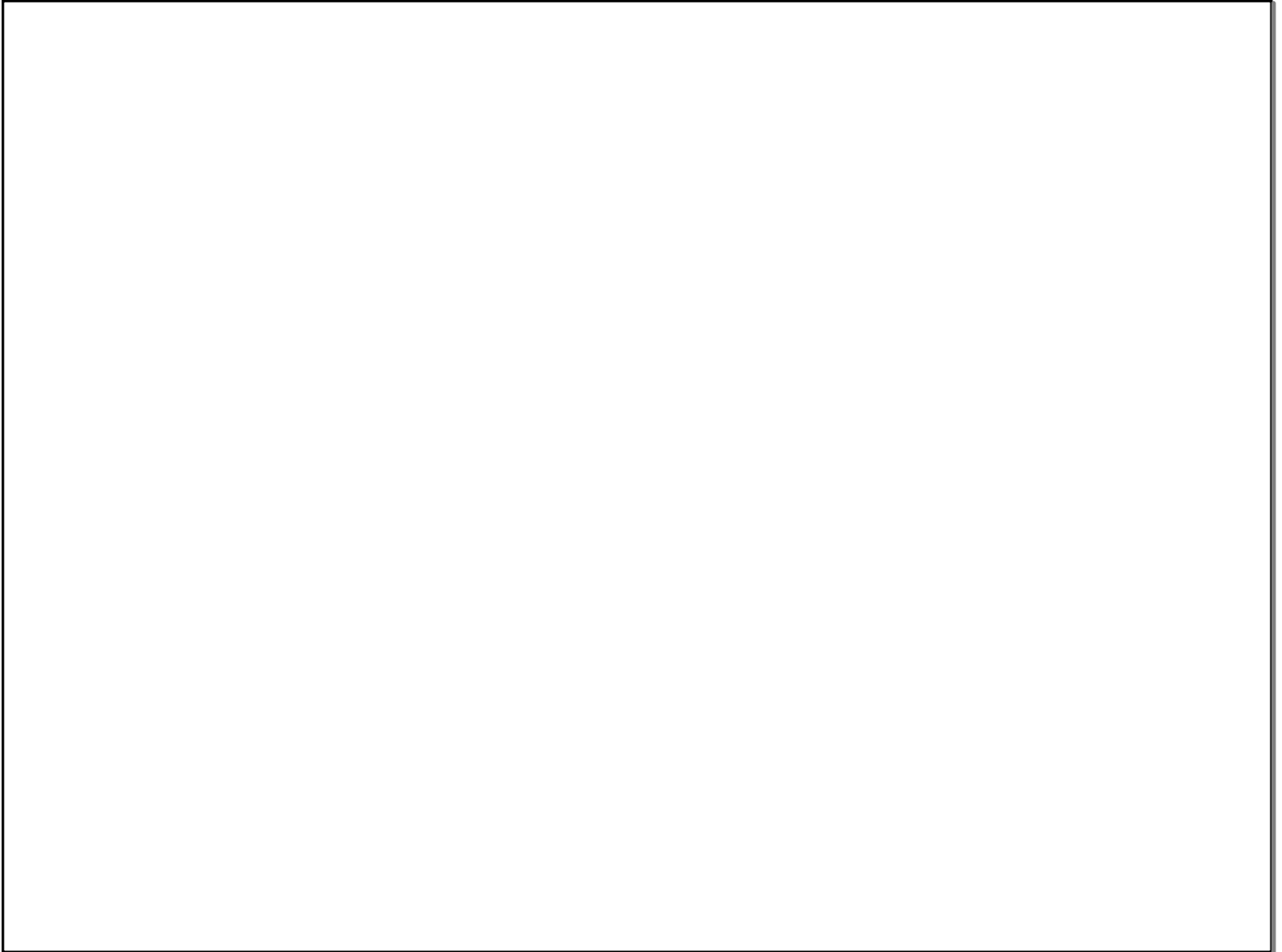
$$(7 \cdot 3 \div 7 - (-5)) - (-1)$$

$$(21 \div 7 - (-5)) - (-1)$$

$$(3 - (-5)) - (-1)$$

$$8 - (-1) = \textcircled{9}$$

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| | |
|--|--|
| 1) $6 + 5 \cdot 4 - (-9) =$ | 3) $\frac{(5 - 11)^2 - 6}{7 + 16 \div 2} =$ |
| 2) $-8 \cdot (-2) + 3^2 - 4 \div 1 + 2 =$ | 4) $(24 \div 4 \cdot 2 \div 3 - (-9)) - (8^2 - 7^2) =$ |
| 5) $\frac{10^2 + (-5^2)}{(-2 + 7)^2} + \frac{-10}{-9 + (2 \cdot (21 \div 3))} =$ | |
| 6) $\left(\frac{(-5 + 7 - (-9) + (-3))^2}{2} \right) \left(\frac{35}{ -9 + 7 + (-3) } \right) =$ | |

$$\begin{aligned} 1) \quad & 6 + 5 \cdot 4 - (-9) = \\ & 6 + 20 - (-9) \\ & 26 - (-9) \\ & \quad \textcircled{35} \end{aligned}$$

$$\begin{aligned} 2) & -8 \cdot (-2) + 3^2 - 4 \div 1 + 2 = \\ & -8 \cdot (-2) + 9 - 4 \div 1 + 2 \\ & 16 + 9 - 4 \div 1 + 2 \\ & 16 + 9 - 4 + 2 \\ & 25 - 4 + 2 \\ & 21 + 2 \\ & \textcircled{23} \end{aligned}$$

$$3) \frac{(5 - 11)^2 - 6}{7 + 16 \div 2} =$$

$$4) (24 \div 4 \cdot 2 \div 3 - (-9)) - (8^2 - 7^2) =$$

$$5) \frac{10^2 + (-5^2)}{(-2 + 7)^2} + \frac{-10}{-9 + (2 \cdot (21 \div 3))} =$$

$$6) \left(\frac{(|-5 + 7| - (-9) + (-3))^2}{2} \right) \left(\frac{35}{|-9 + 7 + (-3)|} \right) =$$