

Show All Work

- 1) Evaluate $8 - 4^2 - (-12)$

$$8 - 16 + 12 = -8 + 12 = 4$$

- 2) Graph the interval $[-2, 2)$ on a number line.



- 3) Evaluate $|8| - |-4|$

$$8 - 4 = 4$$

- 4) Simplify $[(5u)^4]^7$. Leave your answer in exponential notation.

$$(5u)^{28} = 5^{28} \cdot u^{28}$$

- 5) State the degree of $1 + x + 2x^2 + 4x^3$.

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- 6) Add or subtract as indicated. $(-4y^2 - 3y + 8) - (2y^2 - 6y + 2)$

$$\begin{aligned} &= -4y^2 - 3y + 8 - 2y^2 + 6y - 2 \quad \text{reorganize} \\ &= \underbrace{-4y^2 - 2y^2}_{-6y^2} + \underbrace{-3y + 6y}_{3y} + \underbrace{8 - 2}_6 \\ &= \underline{-6y^2 + 3y + 6} \end{aligned}$$

- 7) Find each of the products

a) $-9m(2m^2 + 6m - 1) = \underline{-18m^3 - 54m^2 + 9m}$

b) $(3z + 5)(4z^2 - 2z + 1) = 3z(4z^2 - 2z + 1) + 5(4z^2 - 2z + 1)$
 $= 12z^3 - 6z^2 + 3z + 20z^2 - 10z + 5$
 reorganize
 $= 12z^3 - 6z^2 + 20z^2 + 3z - 10z + 5$
 $= \underline{12z^3 + 14z^2 - 7z + 5}$

- c) $(3y + 5)(2y + 1)$

$$= 6y^2 + 3y + 10y + 5 = \underline{6y^2 + 13y + 5}$$