BECA/Huson/Precalculus: Sequences First and last name:
16 September 2024 Section:

1.9 Do Now: Powers and radicals, sequences

1. Memorize the single digit powers. *3.OA.7 Fluently multiply and divide within 100*

   (a) $3^2 =$

   (b) $6^2 =$

   (c) $5^2 =$

   (d) $9^2 =$

   (e) $4^2 =$

   (f) $2^3 =$

2. Memorize the square roots of whole numbers through 100 and cubes through five.

   (a) $\sqrt{9} =$

   (b) $\sqrt{49} =$

   (c) $\sqrt{64} =$

   (d) $\sqrt{36} =$

   (e) $\sqrt[3]{8} =$

   (f) $\sqrt[3]{27} =$

3. Perform each calculation, write down the full calculator display and then round to the *nearest hundredth*.

   (a) $A = 15.944732$

   (b) $W = 3.4 \times 9.8 \times 4.3 \times 0.15$

   (c) $V = \frac{1}{3}\pi(3.4)^2(6.1)$

   (d) $V = 199.19711$

4. Simplify each expression by "collecting like terms"

   (a) $2x + 4 - x + 11$

   (b) $5y - 4 - 7y + y$

   (c) $14 + 5\pi - 2\pi + 4$

   (d) $2a - 7a + 3\sqrt{5} + \sqrt{5}$

5. Circle whether the sequence is arithmetic, geometric, or neither.

   (a) $2, 4, 6, 8, \ldots$ arithmetic, geometric, neither

   (b) $1, 2, 4, 7, 11, \ldots$ arithmetic, geometric, neither

   (c) $3, 6, 12, 24, \ldots$ arithmetic, geometric, neither

   (d) $13, 10, 7, 4, 1, \ldots$ arithmetic, geometric, neither

   (e) $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \ldots$ arithmetic, geometric, neither

6. Write a recursive formula for the sequence $5, 10, 15, 20, \ldots$

7. Write a recursive formula for the sequence $3, 9, 27, 81, \ldots$

8. A metal sculpture is made from welded steel rods. The first rod is 3 feet long. Each successive rod is 80% of the length of the previous rod. Indicate whether each formula correctly defines the length $L(n)$ of the nth rod by circling True or False.

   (a) T F $L(n) = 3(0.8)^n$

   (b) T F $L(n) = 3(0.8)^{n-1}$

   (c) T F $L(n) = 3 - 0.20n$

   (d) T F $L(1) = 3$, $L(n) = L(n-1)(0.8)$ for $n \geq 2$