BECA/Huson/Geometry: Construction First and last name:
20 September 2024 Section:

1.11 Quiz: Powers, radicals, constructions **Mental math - no calculators**

1. Memorize the squares to 100. *3.OA.7 Fluently multiply and divide within 100*

   (a) $3^2 =$

   (b) $9^2 =$

   (c) $6^2 =$

   (d) $3^3 =$

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

   (a) $\sqrt{64} =$

   (b) $\sqrt{16} =$

   (c) $\sqrt{49} =$

   (d) $\sqrt{4} =$

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

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

3. Round to the *nearest thousandth*.

   (a) $A = 3.1415926$

   (b) $V = 1.4142135$

4. Simplify each expression by "collecting like terms"

   (a) $x - 5x^2 - 6x + 9x^2$

   (b) $5\sqrt{3} + 3y - \sqrt{3} - 7y$

5. Use the function $f(x) = 3x - 5$ to answer the questions.

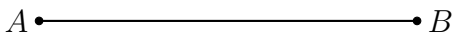
   (a) What is $f(1)$?

   (c) Solve for x if $f(x) = 16$.

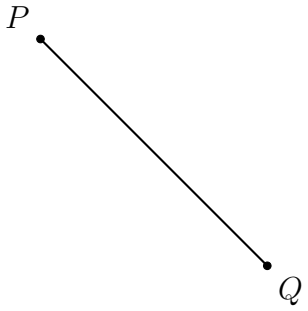
   (b) Find $f(\frac{2}{3})$

Constructions: Use only a compass and straightedge

6. Construct an equilateral triangle with one side $\overline{AB}$. [Leave all construction marks.]



7. Construct a perpendicular bisector the given line segment $\overline{PQ}$. Label the midpoint of $\overline{PQ}$ as M. Mark the right angle with a small square and hash marks on the two congruent segments.



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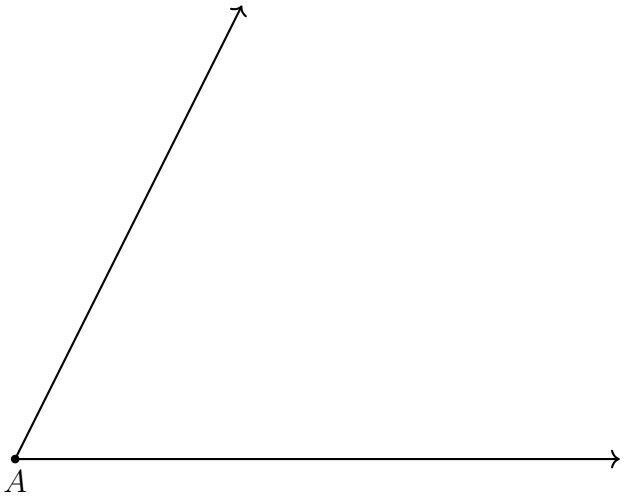
8. Construct an angle bisector the given angle A. [Leave all construction marks.]



Spicy: Construct a hexagon inscribed in a circle

9. Construct an equilateral triangle on $\overline{AB}$ by drawing a circle centered on A. Continue with a second equilateral triangle on $\overline{AC}$ by drawing a circle centered on C. Work around the circle B four more times to construct the hexagon.