BECA / Dr. Huson / Geometry
Unit 8: Year-to-date Regents review
3 March 2023

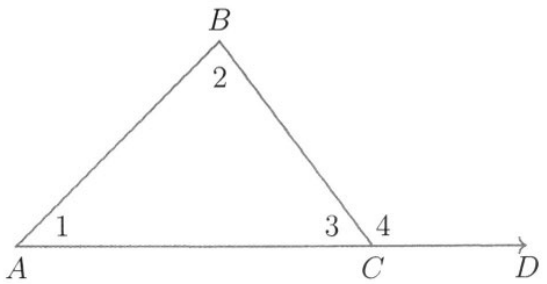
Name: SOLUTIONS

8.6 Quiz: Triangle angles, transversals, segments, solids

1. What is the sum of the internal angle measures of a triangle?

   (a) 45°
   (b) 90°
   (c) 120°
   (d) 180°

2. Given $\triangle ABC$ with $\overrightarrow{ACD}$.



   Which equation is always true?

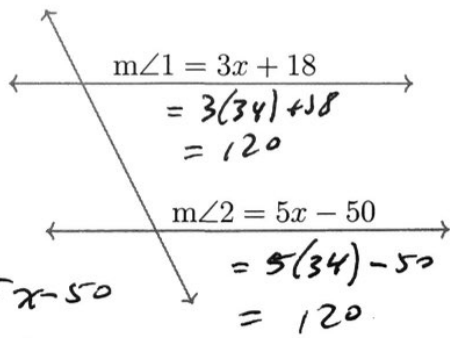
   (a) $m\angle 3 = m\angle 1 + m\angle 2$
   (b) $m\angle 3 = m\angle 1 - m\angle 2$
   (c) $m\angle 4 = m\angle 1 + m\angle 2$
   (d) $m\angle 4 = m\angle 3 - m\angle 2$

3. A regular hexagon is rotated about its center. Which degree measure will carry the regular hexagon onto itself?

   (a) 45°
   (b) 60°
   (c) 90°
   (d) 135°

4. Two parallel lines intersect a transversal. Given corresponding angles $m\angle 1 = 3x + 18$ and $m\angle 2 = 5x - 50$. What is the value of x?

   (a) 34°
   (b) 42°
   (c) 45°
   (d) 51°



$3x + 18 = 5x - 50$
$68 = 2x$
$x = 34$

5. What is the midpoint of $\overline{AB}$, with $A(2,-2)$ and $B(6,12)$.

$M = \left(\frac{2+6}{2}, \frac{-2+12}{2}\right)$

$= (4,5)$

(a) $(0,9)$
(c) $(5,4)$
(b) $(9,0)$
(d) $(4,5)$

HSG.
GPR.B.6
direct-

1/3 : 2/3

6. Point G divides $\overline{AB}$ so that $AG : GB = 1 : 2$. If A has coordinates $(1,0)$ and B has coordinates $(7,9)$, what are the coordinates of G?

$T = B - A = (7-1, 9-0)$

$= (6,9)$

$\frac{1}{3}T = (2,3)$

$(1,0) \xrightarrow{T_{2,3}} (3,3)$

(a) $(3,3)$
(c) $(5,6)$
(b) $(4,4.5)$
(d) $(8,0.5)$

7. What is the volume of a rectangular prism with length 3 cm, width 4 cm, and height 5 cm to the nearest cubic centimeter?

$V = 3 \cdot 4 \cdot 5$

$= 60$

(a) 12
(c) 60
(b) 55
(d) 90

8. A square tabletop will be made of oak wood that weighs 0.025 pounds per cubic inch. The tabletop will measure 48 inches on each side and is two inches thick. Determine the weight of the tabletop, to the nearest pound.

$V = 48 \cdot 48 \cdot 2$

$W = 0.025 \cdot$

$= 115$

(a) 39
(c) 115
(b) 98
(d) 133

9. If a right triangle is continuously rotated around one of its legs (not the hypotenuse), what is the three-dimensional figure formed?

(a) cone
(c) cylinder
(b) sphere
(d) rectangular prism