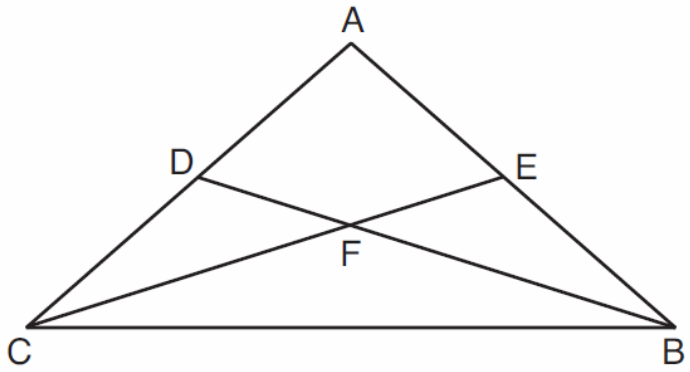
Geometry
Daily Quiz 11012019

Question 1.

In $\triangle ABC$ shown below with $\overline{ADC}$, $\overline{AEB}$, $\overline{CFE}$, and $\overline{BFD}$, $\triangle ACE \cong \triangle ABD$.



Which statement must be true?

(1) $\angle ACF \cong \angle BCF$
(2) $\angle DAE \cong \angle DFE$
(3) $\angle BCD \cong \angle ABD$
(4) $\angle AEF \cong \angle ADF$

(Google is your best friend.)

Question 2.

In a circle whose equation is $(x-1)^2 + (y+3)^2 = 9$, the coordinates of the center and length of its radius are

(1) $(1,-3)$ and r = 81
(2) $(-1,3)$ and r = 81
(3) $(1,-3)$ and r = 3
(4) $(-1,3)$ and r = 3

Question 3.

What are the coordinates of P', the image of point $P(x,y)$ after translation $T_{4,4}$?

(1) $(x-4, y-4)$

(2) $(x+4, y+4)$

(3) $(4x, 4y)$

(4) $(4,4)$

Question 4.

The statement "$x > 5$ or $x < 3$" is *false* when x is equal to

(1) 1

(2) 2

(3) 7

(4) 4

Question 5.

What is an equation of the line that passes through the point $(-2,1)$ and is parallel to the line whose equation is $4x - 2y = 8$?

(1) $y = \frac{1}{2}x + 2$

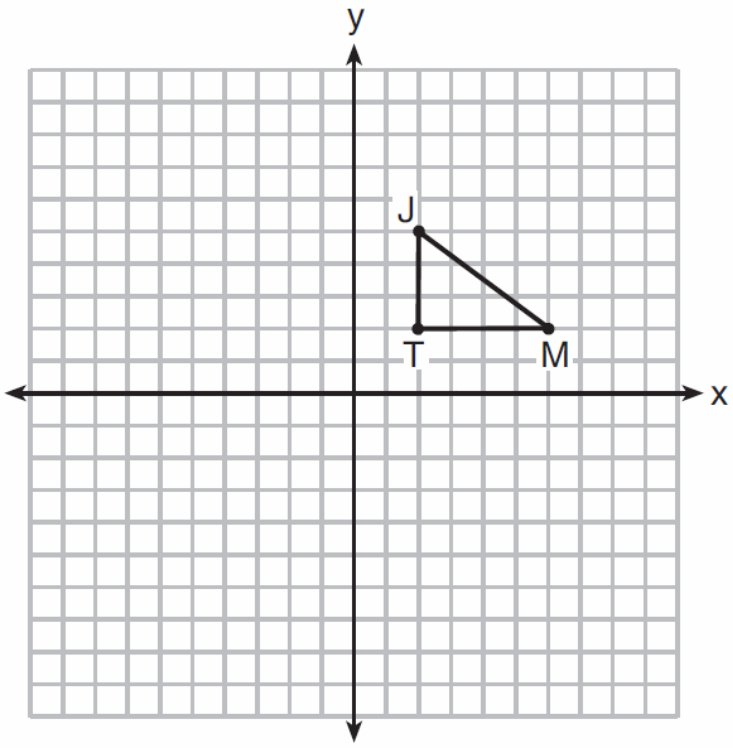
(2) $y = \frac{1}{2}x - 2$

(3) $y = 2x + 5$

(4) $y = 2x - 5$

Question 6.

Triangle JTM is shown on the graph below.



Which transformation would result in an image that is *not* congruent to $\triangle JTM$?

(1) $r_{y=x}$

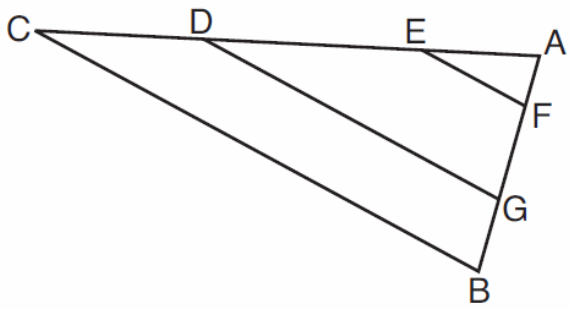
(2) $R_{90°}$

(3) $T_{0,-3}$

(4) D_2

Question 7.

In the diagram below of $\triangle ABC$, with $\overline{CDEA}$ and $\overline{BGFA}$, $\overline{EF} \parallel \overline{DG} \parallel \overline{CB}$.



Which statement is *false*?

(1) $\frac{AC}{AD} = \frac{AB}{AG}$

(2) $\frac{AE}{AF} = \frac{AC}{AB}$

(3) $\frac{AE}{AD} = \frac{EC}{AC}$

(4) $\frac{BG}{BA} = \frac{CD}{CA}$

Question 8.

In $\triangle JKL$, $\overline{JL} \cong \overline{KL}$. If $m\angle J = 58$, then $m\angle L$ is

(1) 61

(2) 64

(3) 116

(4) 122

Question 9.

The corresponding medians of two similar triangles are 8 and 20. If the perimeter of the larger triangle is 45, what is the perimeter of the *smaller* triangle?

(1) 14

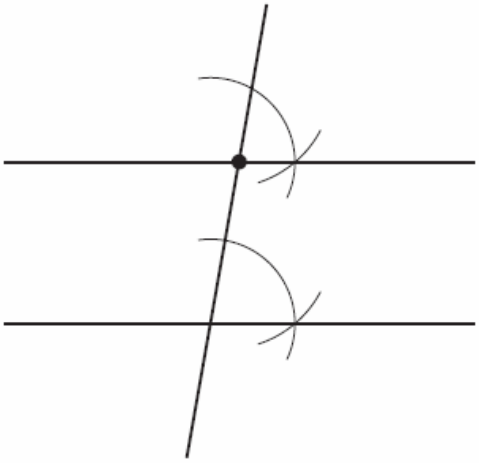
(2) 18

(3) 33

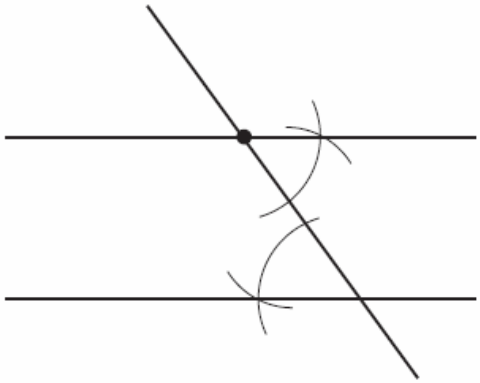
(4) 37

Question 10.

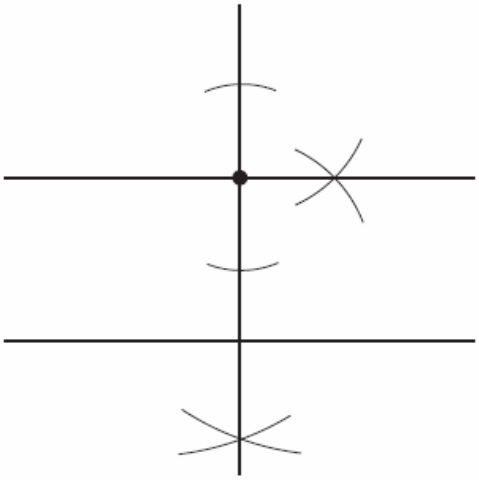
Which construction of parallel lines is justified by the theorem "If two lines are cut by a transversal to form congruent alternate interior angles, then the lines are parallel"?



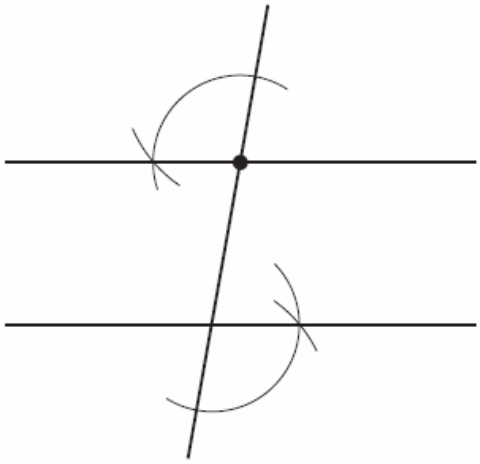
(1)



(3)



(2)



(4)

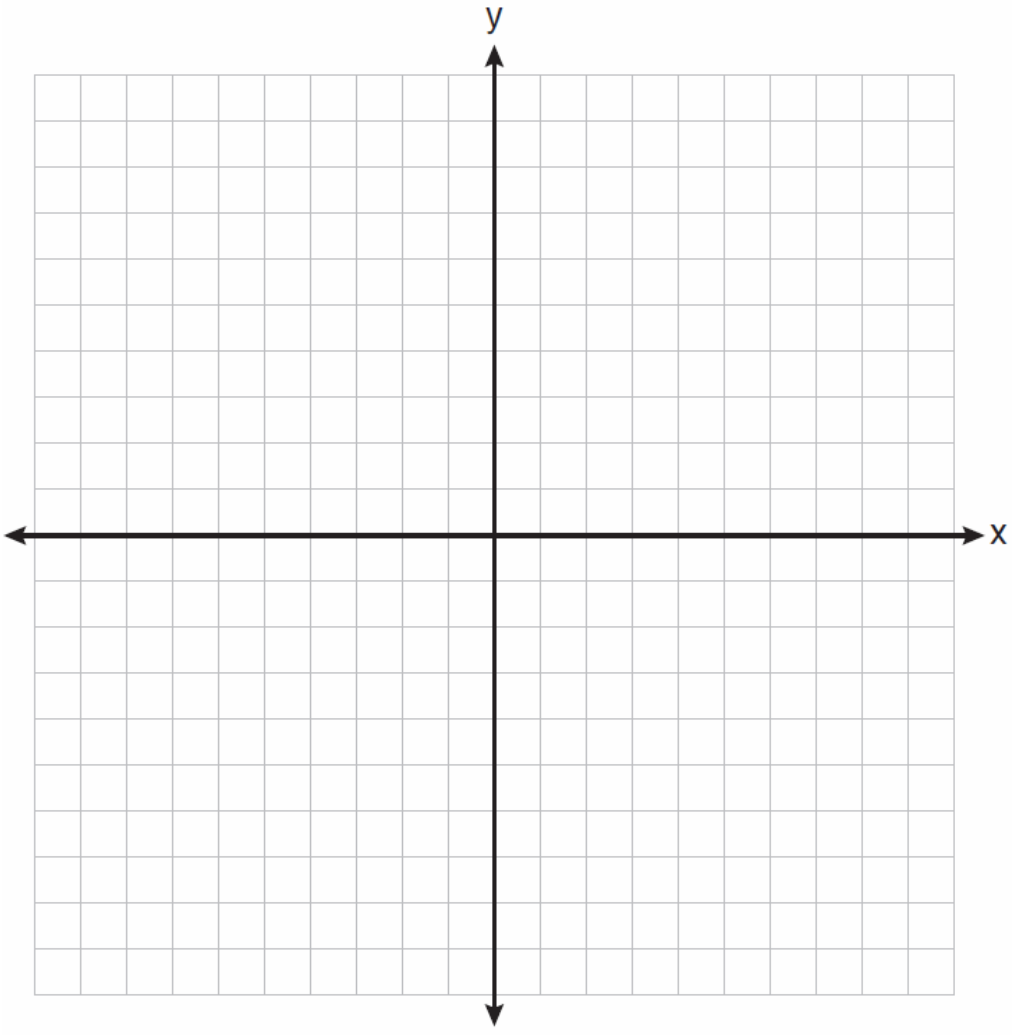
Bonus Question.

Triangle HKL has vertices $H(-7,2)$, $K(3,-4)$, and $L(5,4)$. The midpoint of $\overline{HL}$ is M and the midpoint of $\overline{LK}$ is N.

Determine and state the coordinates of points M and N.

Justify the statement: $\overline{MN}$ is parallel to $\overline{HK}$.

[The use of the set of axes below is optional.]



Fun Fact: The **Centroid** of a Triangle is the centre of the triangle that can be calculated as the point of intersection of all the three medians of a triangle. The median is a line drawn from the midpoint of a side to the opposite vertex. The **centroid** separates all the medians of the triangle in the ratio 2:1.

PARCC
Partnership for Assessment of Readiness for College and Careers

High School Mathematics Assessment Reference Sheet

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 5280 feet
1 mile = 1760 yards
1 mile = 1.609 kilometers

1 kilometer = 0.62 mile
1 pound = 16 ounces
1 pound = 0.454 kilograms
1 kilogram = 2.2 pounds
1 ton = 2000 pounds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon = 3.785 liters
1 liter = 0.264 gallons
1 liter = 1000 cubic centimeters

Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$
Circle	$C = \pi d \text{ or } C = 2\pi r$
General Prisms	$V = Bh$
Cylinder	$V = \pi r^2 h$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \frac{1}{3}\pi r^2 h$
Pyramid	$V = \frac{1}{3}Bh$

Quadratic Formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Arithmetic Sequence	$a_n = a_1 + (n-1)d$
Geometric Sequence	$a_n = a_1 r^{n-1}$
Geometric Series	$S_n = \frac{a_1 - a_1 r^n}{1-r}$ where $r \neq 1$
Radians	1 radian $= \frac{180}{\pi}$ degrees
Degrees	1 degree $= \frac{\pi}{180}$ radians

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