Tennessee Comprehensive Assessment Program

TCAP

Geometry
Grade HS Item Release

TN Department of Education

*Standards implemented from 2023-24 Tennessee Academic Standards for Math

TGM03S271_1

00. The image of $\overline{EF}$ after a sequence of transformations is $\overline{E'F'}$. The mapping shown represents the sequence of transformations.

$$(x, y) \rightarrow (2x + 3, -2y + 3)$$

Which transformation is part of the sequence of transformations used to create $\overline{E'F'}$?

A. a vertical shift of 3 units

B. a horizontal shift of 2 units

C. a reflection over the y-axis

D. a dilation about the origin by a scale factor of 3

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TGM03S273_1

00. In the coordinate plane, a single transformation maps scalene $\triangle ABC$ to $\triangle DEF$, so that $\triangle ABC \cong \triangle FDE$.

Which statement must be true?

A. If the transformation was a 90°-clockwise rotation about the origin, then $\overline{AC} \cong \overline{FE}$.

B. If the transformation was a 90°-clockwise rotation about the origin, then $\angle A \cong \angle D$.

C. If the transformation was a dilation with a scale factor of 2 centered at the origin, then $\overline{BC} \cong \overline{DE}$.

D. If the transformation was a dilation with a scale factor of 2 centered at the origin, then $\angle C \cong \angle E$.

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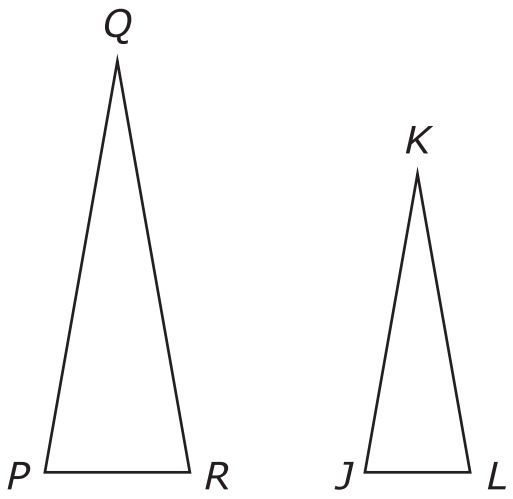
TN0001523_1, 3, 5

00. In the diagram, isosceles $\triangle PQR$ is the image of $\triangle JKL$ after a dilation of d units, and $m\angle K = 20°$.



Which equations must be correct?

Select the **three** correct answers.

A. $m\angle J = 80°$

B. $m\angle Q = 60°$

C. $m\angle J = m\angle L$

D. $m\angle P = d(m\angle J)$

E. $m\angle P + m\angle L = 160°$

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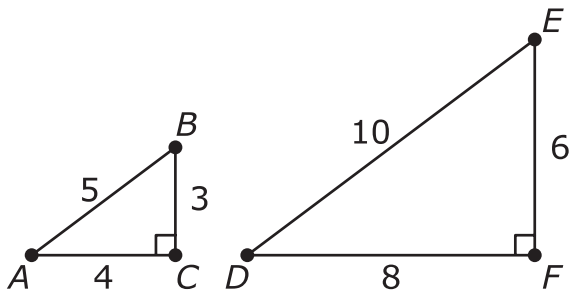
TN944595_2, 3, 5

00. The diagram shows $\triangle ABC$ and $\triangle DEF$.



Which statements are true for $\triangle ABC$ and $\triangle DEF$?

Select the **three** correct answers.

A. $\triangle ABC \cong \triangle DEF$

B. $\triangle ABC \sim \triangle DEF$

C. $\sin A = \frac{3}{5}$, $\sin D = \frac{3}{5}$, $\sin B = \frac{4}{5}$, $\sin E = \frac{4}{5}$

D. $\tan A = \frac{BC}{AB}$, $\tan D = \frac{EF}{ED}$

E. The scale factor of $\triangle ABC$ to $\triangle DEF$ is 1:2.

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TGM03S034_4

00. The coordinates of the vertices of quadrilateral *ABCD* are given.

$A(-2, -2)$ $B(-7, 3)$ $C(-3, 7)$ $D(3, 3)$

Which statement is true about quadrilateral *ABCD*?

A. Quadrilateral *ABCD* is a rhombus but not a square.

B. Quadrilateral *ABCD* is a rectangle but not a square.

C. Quadrilateral *ABCD* is a parallelogram but not a rectangle.

D. Quadrilateral *ABCD* is a trapezoid but not a parallelogram.

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TN0082704_3, 5

00. Which objects have volumes that are best modeled by the formula $V = \pi r^2 h$?

Select the **two** correct answers.

A. a computer

B. a soccer ball

C. a can of juice

D. a round balloon

E. a roll of paper towels

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Metadata- Math

Items

Page Number	UIN	Grade	Item Type	Key	DOK	TN Standards	Calculator
1	TGM03S271	Geometry	MC	A	2	G.CO.A.1	Y
2	TGM03S273	Geometry	MC	A	2	G.CO.B.6	Y
3	TN0001523	Geometry	MS	A, C, E	2	G.SRT.A.2	N
4	TN944595	Geometry	MS	B, C, E	2	G.SRT.C.4.a	N
5	TGM03S034	Geometry	MC	D	2	G.GPE.A.1	Y
6	TN0082704	Geometry	MS	C, E	1	G.MG.A.1	N

Metadata Definitions:

UIN	Unique letter/number code used to identify the item.
Grade	Grade level or Course.
Item Type	Indicates the type of item. MC= Multiple Choice; MS= Multiple Select; FIB = Fill-in-the-blank
Key	Correct answer.
DOK	Depth of Knowledge (cognitive complexity) is measured on a three-point scale. 1 = Recall or simple reproduction of information; 2 = Skills and concepts: comprehension and processing of text; 3 = Strategic thinking, prediction, elaboration.
TN Standards	Primary educational standard assessed.
Calculator	Y for items that permit calculator use.

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