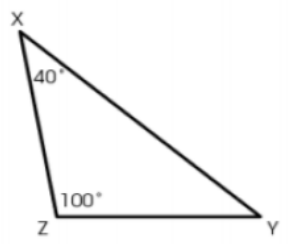
2022 Review Exam Q3 Part 1

1 Line segment AB has endpoints $A\,(-1.5,\ 0)$ and $B\,(4.5,\ 8)$. Point C is on line segment AB and is located at $(0,\ 2)$ What is the ratio of $\frac{AC}{CB}$?

2 Triangle XYZ is shown.



Which triangle must be similar to triangle XYZ?

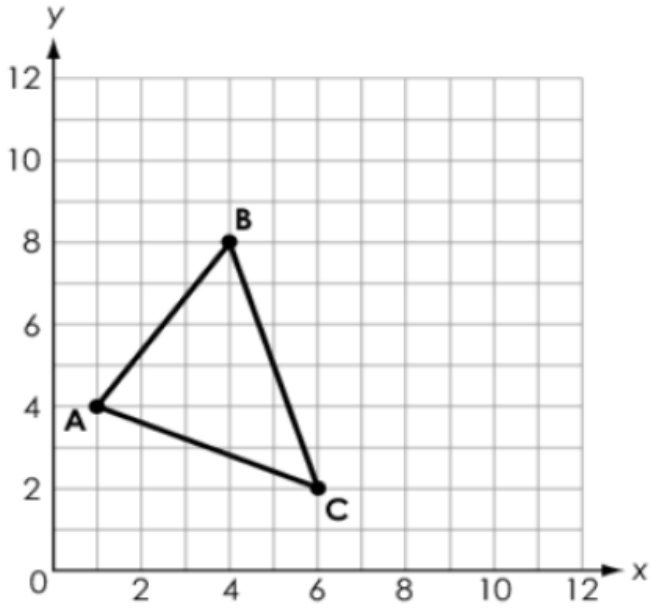
(A) a triangle with two angles that measure 40°

(B) a triangle with angles that measure 40° and 60°

(C) a scalene triangle with only one angle that measures 100°

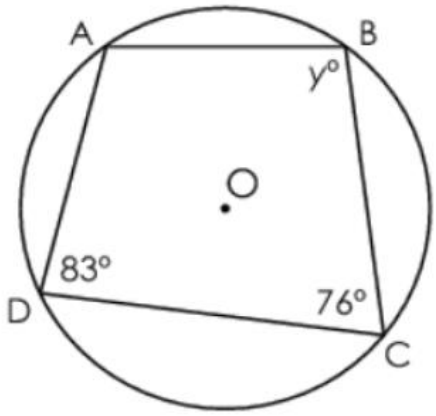
(D) an isosceles triangle with only one angle that measures 40°

3 Triangle ABC is shown.



Triangle $A'B'C'$ is created by dilating ΔABC by 4.
What is the length of $\overline{A'B'}$?

4 Quadrilateral $ABCD$ is inscribed in circle O, as shown.



What is the value of y?

5 Angle A is the complement of angle B.
Which equation about the two angles must be true?

(A) $\sin A = \sin B$

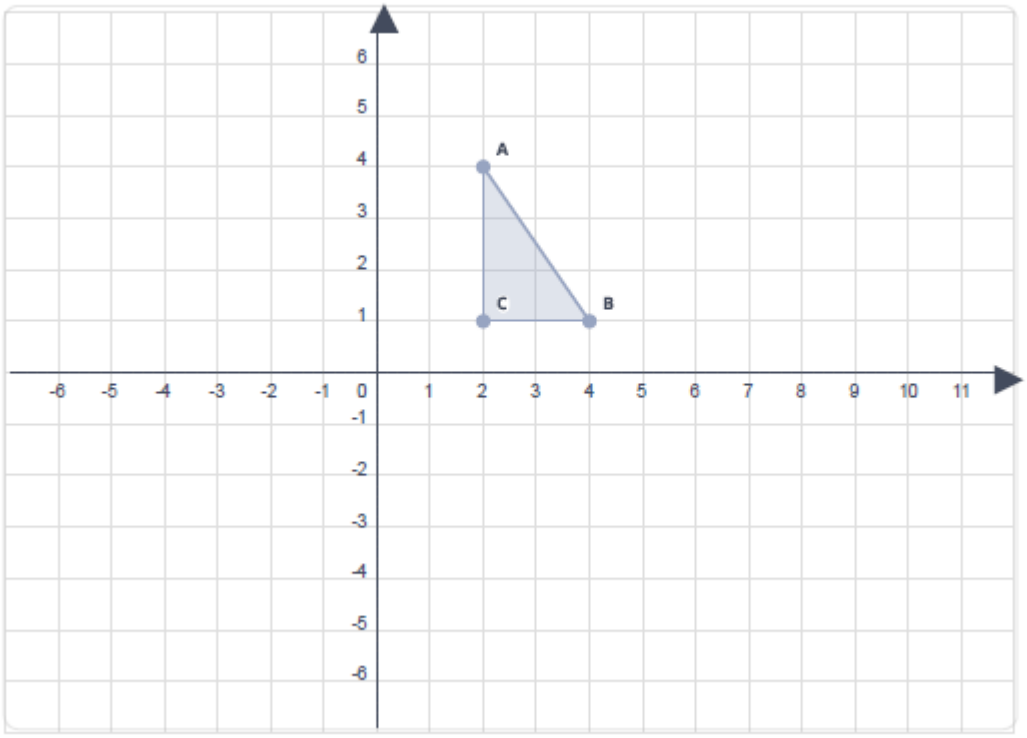
(B) $\sin A = \cos A$

(C) $\cos B = \sin B$

(D) $\cos A = \sin B$

6 The equation of a circle is shown.
$x^2 + y^2 - 10x + 8y + 16 = 0$
What is the radius of the circle?
radius =

7 Triangle ABC is reflected across the line $y = x$.
Use the Triangle tool to create the triangle on the coordinate grid.



2022 Review Exam Q3 Part 2

1

A right triangle ABC is shown.

What is cos A?

2

Line k has a slope of -5. Line j is perpendicular to line k and passes through the point $(5, 9)$.

Create the equation for line j.

3

A triangle is shown.

What is the length, in inches (in.), of side a?

4 Which terms is defined as two intersecting lines that form four right angles?

(A) skew lines

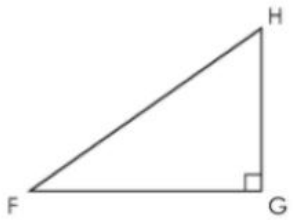
(B) straight lines

(C) parallel lines

(D) perpendicular lines

5 .

Right triangle FHG is shown.



The sine of $\angle F$ is 0.53.

What is the cosine of $\angle H$? Round your answer to the nearest hundredth as needed.

6 Triangle MNO is transformed to produce triangle PQR.
Select all the transformations that would guarantee triangles MNO and PQR are congruent

[A] a dilation, then a translation

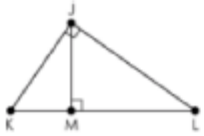
[B] a reflection, then a dilation

[C] a reflection, then a rotation

[D] a rotation, then a translation

[E] a translation, then a reflection

7 Mark is proving the Pythagorean Theorem. He draws right triangle JKL with altitude $\overline{JM}$. First he proves $\Delta JKL \sim \Delta MKJ$ and $\Delta JKL \sim \Delta MJL$ using the Angle - Angle criterion. The rest of his proof is shown with some steps missing.



Statements	Reasons
1. $\Delta JKL \sim \Delta MKJ \text{ and } \Delta JKL \sim \Delta MKL$	1. Angle - Angle Criterion
2. $\frac{JK}{LK} = \frac{MK}{JK} \text{ and } \frac{LJ}{LK} = \frac{ML}{LJ}$	2. Corresponding sides of similar triangles are proportional
3. $(JK)^2 = LK \cdot MK \text{ and } (LJ)^2 = LK \cdot ML$	3. Multiplication property of equality
4.	4.
5.	5.
6. $MK + ML = LK$	6. Segment Addition Postulate
7. $(JK)^2 + (LJ)^2 = (LK)^2$	7. Substitution

(A)

4. $(JK)^2+(LJ)^2=LK\cdot MK+LK\cdot ML$	4. Addition property of equality
5. $(JK)^2+(LJ)^2=LK(MK+ML)$	5. Distributive property

(B)

4. $(JK)^2+(LJ)^2=LK\cdot MK+LK\cdot ML$	4. Addition property of equality
5. $(JK)^2+(LJ)^2=LK(LK+LK)$	5. Distributive property

(C)

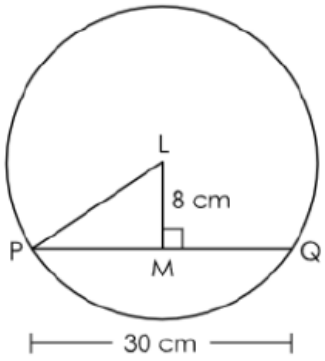
4. $(JK)^2\cdot(JK)^2=LK\cdot MK\cdot LK\cdot ML$	4. Multiplication property of equality
5. $(JK)^2\cdot(LJ)^2=LK(MK\cdot ML)$	5. Distributive property

(D)

4. $(JK)^2\cdot(JK)^2=LK\cdot MK\cdot LK\cdot ML$	4. Multiplication property of equality
5. $(JK)^2\cdot(LJ)^2=LK(LK\cdot LK)$	5. Distributive property

2022 Review Exam Q3 Part 3

1 In the figure shown, L is the center of the circle and $\overline{PQ}$ is a chord of the circle measuring 30 centimeters (**cm**).



What is the length, in centimeters of $\overline{PL}$?

2 A sequence of translations maps a GHI to $\triangle G'H'I'$.

- $\triangle GHI$ has vertices at $G\,(-8, 2)$, $H\,(13, 2)$, and $I(-2, 10)$.
- The coordinates of G' are $(-1, -3)$.

What are the coordinates for H' and I'?

$H'($ ____ , ____ $)$
$I'($ ____ , ____ $)$

3 A circle with center L contains points J and K. Circle L is dilated by a factor of 2, resulting in a new circle with center P. Points M and N are on circle P such that central angle MPN has the same measure as central angle JLK.

Which statement correctly identifies the relationship between the arc length of JK and the arc length of MN?

(A) The arc length of JK is half the arc length of MN.

(B) The arc length of MN is half the arc length of JK.

(C) The arc length of JK is a quarter of the arc length of MN.

(D) The arc length of MN is a quarter of the arc length of JK.

4 Point A is located at $(-1, -5)$. The midpoint of line segment AB is point $C(2, 3)$.

What are the coordinates of point B?

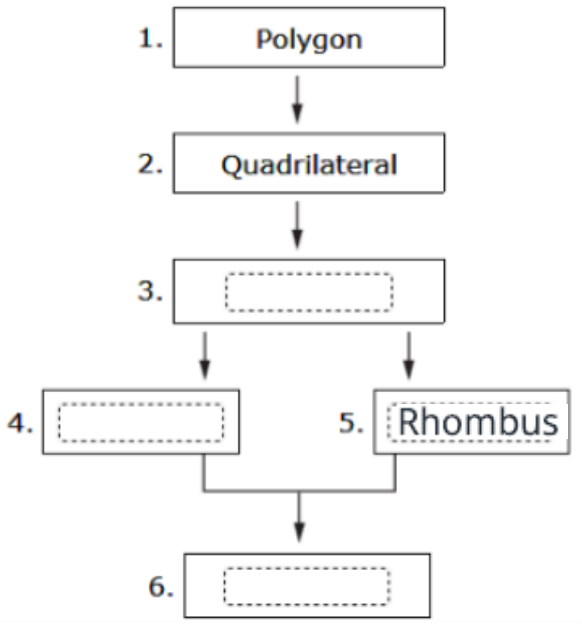
(,)

5 In triangle ABC, $\angle A$ and $\angle B$ are complementary, where $\cos A = 0.5$.

What is the measure, in degrees, of $\angle B$?

degrees

6 A partially completed chart shows the hierarchy of a set of polygons.



Move a term to each blank box to complete the chart.

DRAG & DROP THE ANSWER

Kite

Square

Parallelogram

Rectangle