

# GEOMETRY (COMMON CORE)

The University of the State of New York  
REGENTS HIGH SCHOOL EXAMINATION

## GEOMETRY (Common Core)

Thursday, January 28, 2016 — 9:15 a.m. to 12:15 p.m., only

Student Name: \_\_\_\_\_

School Name: \_\_\_\_\_

The possession or use of any communications device is strictly prohibited when taking this examination. If you have or use any communications device, no matter how briefly, your examination will be invalidated and no score will be calculated for you.

Print your name and the name of your school on the lines above.

A separate answer sheet for Part I has been provided to you. Follow the instructions from the proctor for completing the student information on your answer sheet.

This examination has four parts, with a total of 36 questions. You must answer all questions in this examination. Record your answers to the Part I multiple-choice questions on the separate answer sheet. Write your answers to the questions in Parts II, III, and IV directly in this booklet. All work should be written in pen, except for graphs and drawings, which should be done in pencil. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale.

The formulas that you may need to answer some questions in this examination are found at the end of the examination. This sheet is perforated so you may remove it from this booklet.

Scrap paper is not permitted for any part of this examination, but you may use the blank spaces in this booklet as scrap paper. A perforated sheet of scrap graph paper is provided at the end of this booklet for any question for which graphing may be helpful but is not required. You may remove this sheet from this booklet. Any work done on this sheet of scrap graph paper will *not* be scored.

When you have completed the examination, you must sign the statement printed at the end of the answer sheet, indicating that you had no unlawful knowledge of the questions or answers prior to the examination and that you have neither given nor received assistance in answering any of the questions during the examination. Your answer sheet cannot be accepted if you fail to sign this declaration.

Notice...

A graphing calculator, a straightedge (ruler), and a compass must be available for you to use while taking this examination.

DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN.

GEOMETRY (COMMON CORE)

## Part I

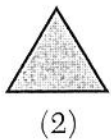
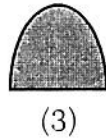
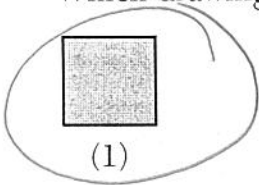
Answer all 24 questions in this part. Each correct answer will receive 2 credits. Utilize the information provided for each question to determine your answer. Note that diagrams are not necessarily drawn to scale. For each statement or question, choose the word or expression that, of those given, best completes the statement or answers the question. [48]

- 1 William is drawing pictures of cross sections of the right circular cone below.

Use this space for computations.



Which drawing can not be a cross section of a cone?



- 2 An equation of a line perpendicular to the line represented by the equation  $y = -\frac{1}{2}x - 5$  and passing through  $(6, -4)$  is

negative reciprocal slopes

(1)  $y = -\frac{1}{2}x + 4$

(3)  $y = 2x + 14$

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

(4)  $y = 2x - 16$

$m = 2$

$y = mx + b$

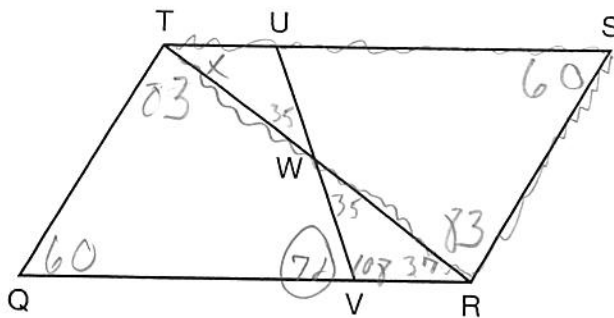
$-4 = 2(6) + b$

$-16 = 6$

$y = 2x - 16$

- 3 In parallelogram  $QRST$  shown below, diagonal  $\overline{TR}$  is drawn,  $U$  and  $V$  are points on  $\overline{TS}$  and  $\overline{QR}$ , respectively, and  $\overline{UV}$  intersects  $\overline{TR}$  at  $W$ .

Use this space for computations.



$$x + 60 + 83 = 180$$

$$x = 37$$

$$\therefore \angle WVR = 37 \quad \text{Alt. int. \(\angle\)'s}$$

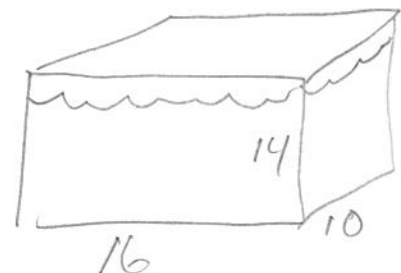
$$\angle WVR = 110^\circ \quad \text{Sum of \(\Delta\)'s \(\angle\)'s}$$

If  $m\angle S = 60^\circ$ ,  $m\angle SRT = 83^\circ$ , and  $m\angle TWU = 35^\circ$ , what is  $m\angle WVQ$ ?

- (1)  $37^\circ$  (3)  $72^\circ$   
(2)  $60^\circ$  (4)  $83^\circ$

- 4 A fish tank in the shape of a rectangular prism has dimensions of 14 inches, 16 inches, and 10 inches. The tank contains 1680 cubic inches of water. What percent of the fish tank is empty?

- (1) 10 (3) 50  
(2) 25 (4) 75



$$V = l \cdot w \cdot h = 16 \cdot 10 \cdot 14$$

$$V = 2240$$

$$2240 - 1680 = 560 \text{ empty}$$

- 5 Which transformation would result in the perimeter of a triangle being different from the perimeter of its image?

- (1)  $(x, y) \rightarrow (y, x)$  (3)  $(x, y) \rightarrow (4x, 4y)$   
(2)  $(x, y) \rightarrow (x, -y)$  (4)  $(x, y) \rightarrow (x + 2, y - 5)$

$$\frac{560}{2240} = .25$$

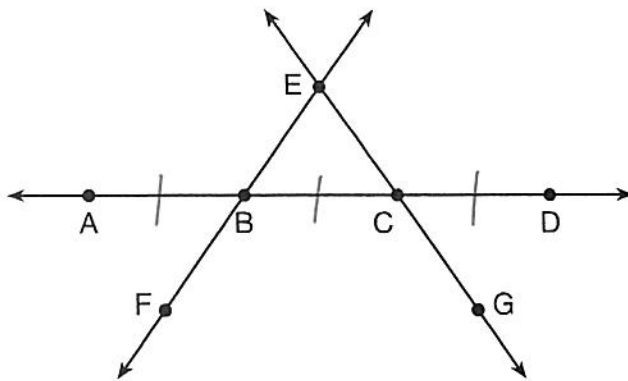
only dilation

Reflection

Translation

6 In the diagram below,  $\overline{FE}$  bisects  $\overline{AC}$  at B, and  $\overline{GE}$  bisects  $\overline{BD}$  at C.

Use this space for computations.



Which statement is always true?

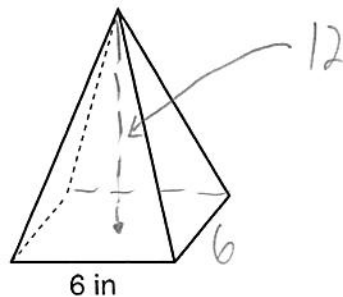
(1)  $\overline{AB} \cong \overline{DC}$

(3)  $\overline{BD}$  bisects  $\overline{GE}$  at C.

(2)  $\overline{FB} \cong \overline{EB}$

(4)  $\overline{AC}$  bisects  $\overline{FE}$  at B.

7 As shown in the diagram below, a regular pyramid has a square base whose side measures 6 inches.



$$\begin{aligned}
 V &= \frac{1}{3} B \cdot h \\
 &= \frac{1}{3} (36) \cdot 12 \\
 &= 144
 \end{aligned}$$

If the altitude of the pyramid measures 12 inches, its volume, in cubic inches, is

(1) 72

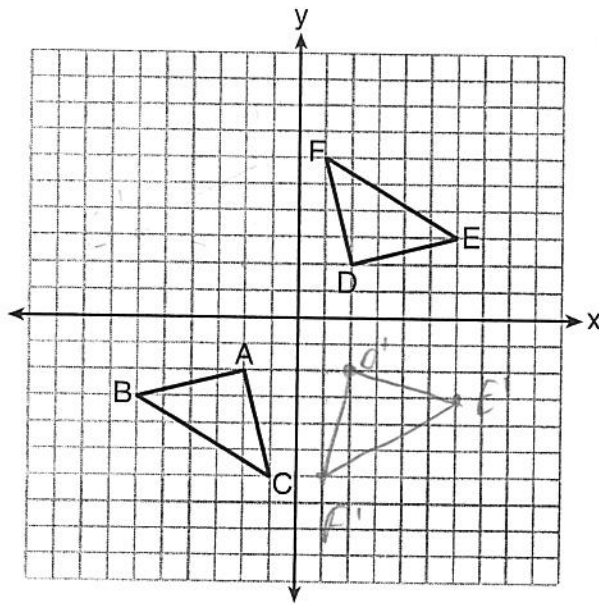
(3) 288

(2) 144

(4) 432

8 Triangle  $ABC$  and triangle  $DEF$  are graphed on the set of axes below.

Use this space for  
computations.



Which sequence of transformations maps triangle  $ABC$  onto triangle  $DEF$ ?

- (1) a reflection over the  $x$ -axis followed by a reflection over the  $y$ -axis
- (2) a  $180^\circ$  rotation about the origin followed by a reflection over the line  $y = x$
- (3) a  $90^\circ$  clockwise rotation about the origin followed by a reflection over the  $y$ -axis
- (4) a translation 8 units to the right and 1 unit up followed by a  $90^\circ$  counterclockwise rotation about the origin

Use this space for  
computations.

9 In  $\triangle ABC$ , the complement of  $\angle B$  is  $\angle A$ . Which statement is always true?

- (1)  $\tan \angle A = \tan \angle B$  (3)  $\cos \angle A = \tan \angle B$   
(2)  $\sin \angle A = \sin \angle B$  (4)  $\sin \angle A = \cos \angle B$

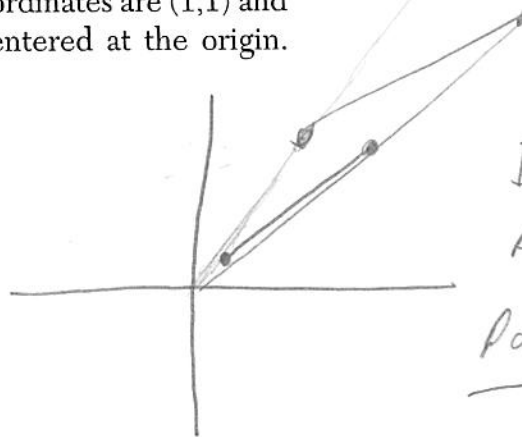
IF  $\angle A + \angle B = 90$

then  $\sin A = \cos B$

i.e.  $\sin 32 = \cos 58$

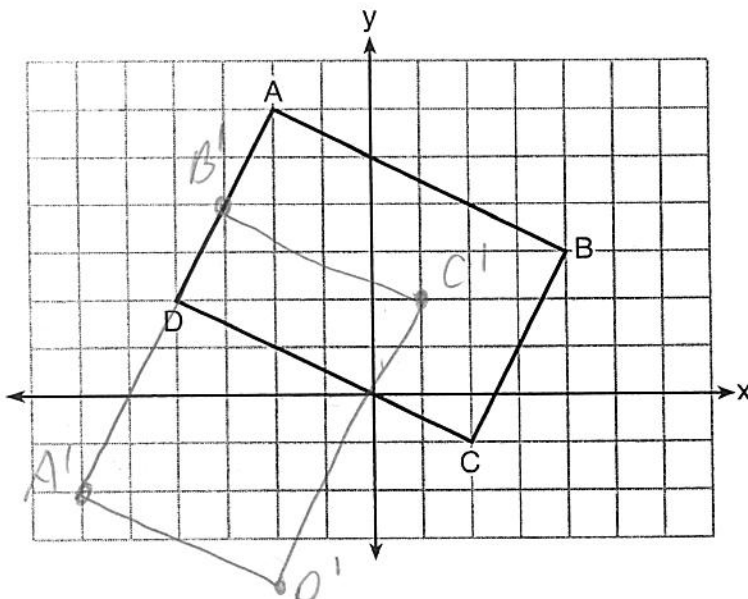
10 A line that passes through the points whose coordinates are (1,1) and (5,7) is dilated by a scale factor of 3 and centered at the origin. The image of the line

- (1) is perpendicular to the original line  
(2) is parallel to the original line  
(3) passes through the origin  
(4) is the original line



Dilations  
Preserve  
Parallelism

11 Quadrilateral  $ABCD$  is graphed on the set of axes below.



When  $ABCD$  is rotated  $90^\circ$  in a counterclockwise direction about the origin, its image is quadrilateral  $A'B'C'D'$ . Is distance preserved under this rotation, and which coordinates are correct for the given vertex?

- (1) no and  $C'(1,2)$  (3) yes and  $A'(6,2)$   
(2) no and  $D'(2,4)$  (4) yes and  $B'(-3,4)$

Rotate your paper  
 $90^\circ$ !

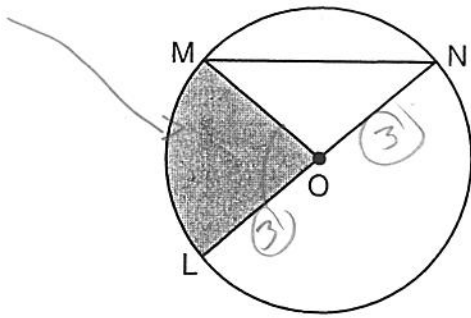
Rigid motions preserve

Distance &  $\angle$  measure.

Rotation is a Rigid motion.

- 12 In the diagram below of circle  $O$ , the area of the shaded sector  $LOM$  is  $2\pi \text{ cm}^2$ .

Use this space for computations.



$$\frac{\angle MOL}{360} = \frac{2\pi}{9\pi}$$

$$\angle MOL = 80^\circ$$

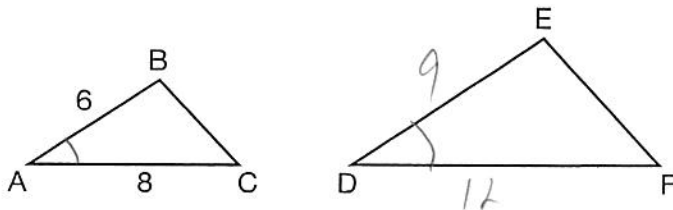
If the length of  $\overline{NL}$  is 6 cm, what is  $m\angle N$ ?

- (1)  $10^\circ$   
(2)  $20^\circ$

- (3)  $40^\circ$   
(4)  $80^\circ$

$$\text{so } \angle N = \frac{1}{2}(80) = 40$$

- 13 In the diagram below,  $\triangle ABC \sim \triangle DEF$ .



If  $AB = 6$  and  $AC = 8$ , which statement will justify similarity by SAS?

- (1)  $DE = 9$ ,  $DF = 12$ , and  $\angle A \cong \angle D$   
(2)  $DE = 8$ ,  $DF = 10$ , and  $\angle A \cong \angle D$   
~~(3)  $DE = 36$ ,  $DF = 64$ , and  $\angle C \cong \angle F$~~   
~~(4)  $DE = 15$ ,  $DF = 20$ , and  $\angle C \cong \angle F$~~

Need  $\angle A = \angle D$

$$\frac{6}{9} = \frac{8}{12}$$

Sides in proportion

$$77 = 72 \checkmark$$

- 14 The diameter of a basketball is approximately 9.5 inches and the diameter of a tennis ball is approximately 2.5 inches. The volume of the basketball is about how many times greater than the volume of the tennis ball?

- (1) 3591  
(2) 65

- (3) 55  
(4) 4



$$V_B = \frac{4}{3}\pi(4.75)^3 = 448.9$$

$$V_T = \frac{4}{3}\pi(1.25)^3 = 8.18$$

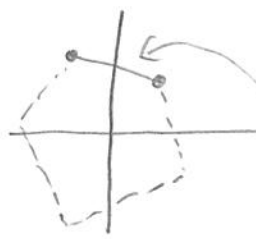


Use this space for computations.

- 15 The endpoints of one side of a regular pentagon are  $(-1,4)$  and  $(2,3)$ .  
What is the perimeter of the pentagon?

- (1)  $\sqrt{10}$   
(2)  $5\sqrt{10}$

- (3)  $5\sqrt{2}$   
(4)  $25\sqrt{2}$

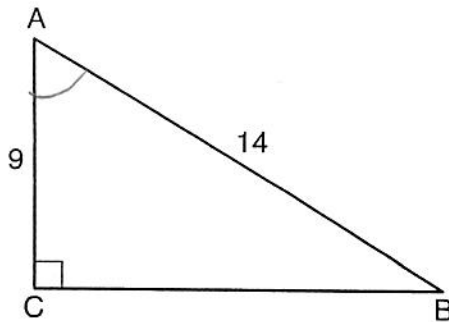


$$d = \sqrt{(-1-2)^2 + (4-3)^2}$$

$$= \sqrt{9 + 1}$$

$$= \sqrt{10}$$

- 16 In the diagram of right triangle  $ABC$  shown below,  $AB = 14$  and  $AC = 9$ .



$$\cos A = \frac{9}{14}$$

$$\cos^{-1}\left(\frac{9}{14}\right) = 49.99^\circ$$

$$\approx 50^\circ$$

What is the measure of  $\angle A$ , to the nearest degree?

- (1) 33  
(2) 40

- (3) 50  
(4) 57

- 17 What are the coordinates of the center and length of the radius of the circle whose equation is  $x^2 + 6x + y^2 - 4y = 23$ ?

- (1)  $(3, -2)$  and 36  
(2)  $(3, -2)$  and 6

- (3)  $(-3, 2)$  and 36  
(4)  $(-3, 2)$  and 6

$$x^2 + 6x + y^2 - 4y = 23$$

$$x^2 + 6x + 9 + y^2 - 4y + 4 = 23 + 9 + 4$$

$$(x+3)(x+3) + (y-2)(y-2) = 36$$

$$(x+3)^2 + (y-2)^2 = 36$$

- 18 The coordinates of the vertices of  $\triangle RST$  are  $R(-2, -3)$ ,  $S(8, 2)$ , and  $T(4, 5)$ . Which type of triangle is  $\triangle RST$ ?

- (1) right  
(2) acute

- (3) obtuse  
(4) equiangular

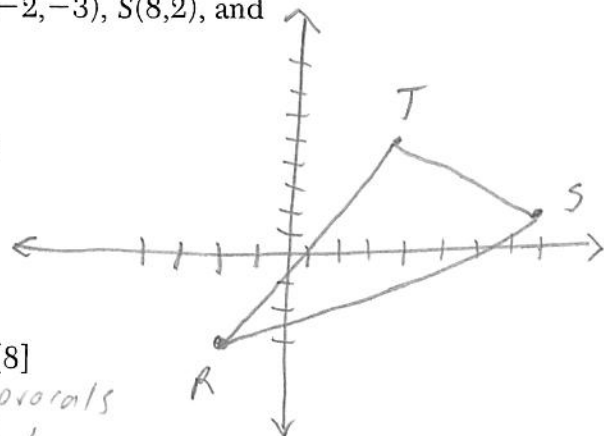
$$m\overline{RT} = \frac{-3-5}{-2-4} = \frac{-8}{-6} = \frac{4}{3}$$

$$m\overline{ST} = \frac{2-5}{8-4} = \frac{-3}{4}$$

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[8]

Negative reciprocals  
 $\therefore \angle T$  is Right





- 19 Molly wishes to make a lawn ornament in the form of a solid sphere. The clay being used to make the sphere weighs .075 pound per cubic inch. If the sphere's radius is 4 inches, what is the weight of the sphere, to the nearest pound?

(1) 34

(2) 20

(3) 15

(4) 4

Use this space for computations.



$$V = \frac{4}{3} \pi r^3 = \frac{4}{3} \pi (4)^3$$

$$= 268.0825731$$

$$\times .075$$

$$20.106$$

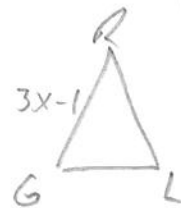
- 20 The ratio of similarity of  $\triangle BOY$  to  $\triangle GRL$  is 1:2. If  $BO = x + 3$  and  $GR = 3x - 1$ , then the length of  $GR$  is

(1) 5

(2) 7

(3) 10

(4) 20



$$2(x+3) = 3x-1$$

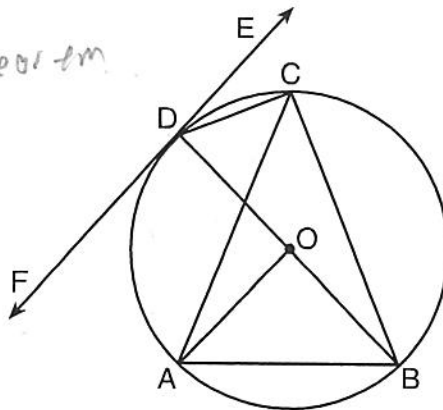
$$2x+6 = 3x-1$$

$$x = 7$$

$$GR = 3(7) - 1 = 20$$

- 21 In the diagram below,  $\overline{DC}$ ,  $\overline{AC}$ ,  $\overline{DOB}$ ,  $\overline{CB}$ , and  $\overline{AB}$  are chords of circle  $O$ ,  $\overline{FDE}$  is tangent at point  $D$ , and radius  $\overline{AO}$  is drawn. Sam decides to apply this theorem to the diagram: "An angle inscribed in a semi-circle is a right angle."

Thales Theorem



Which angle is Sam referring to?

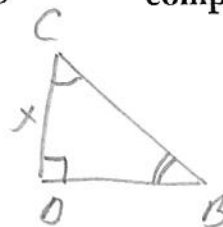
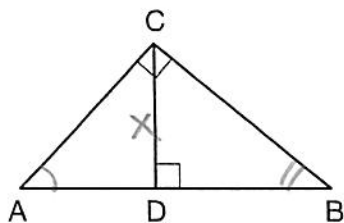
(1)  $\angle AOB$

(2)  $\angle BAC$

(3)  $\angle DCB$

(4)  $\angle FDB$

- 22 In the diagram below,  $\overline{CD}$  is the altitude drawn to the hypotenuse  $\overline{AB}$  of right triangle  $ABC$ .



Use this space for computations.

$\Delta's \sim$

$$\frac{AD}{x} = \frac{x}{DB}$$

$$x^2 = (AD)(DB)$$

$$x^2 = 3(21)$$

$$x^2 = 63$$

$$x = \sqrt{63} = 3\sqrt{7}$$

$$x = \sqrt{9 \cdot 7}$$

$$= 3\sqrt{7} \neq 6\sqrt{2}$$

Which lengths would not produce an altitude that measures  $6\sqrt{2}$ ?

- (1)  $AD = 2$  and  $DB = 36$  (3)  $AD = 6$  and  $DB = 12$

- (2)  $AD = 3$  and  $AB = 24$  (4)  $AD = 8$  and  $AB = 17$

$$DB = 21$$

- 23 A designer needs to create perfectly circular necklaces. The necklaces each need to have a radius of 10 cm. What is the largest number of necklaces that can be made from 1000 cm of wire?

- (1) 15

- (3) 31

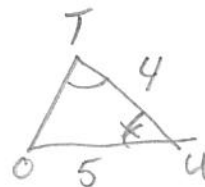
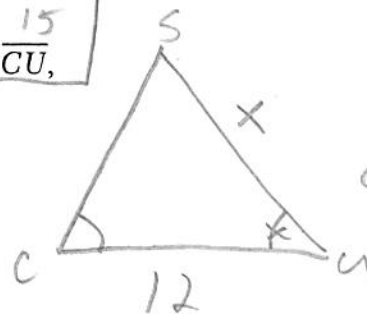
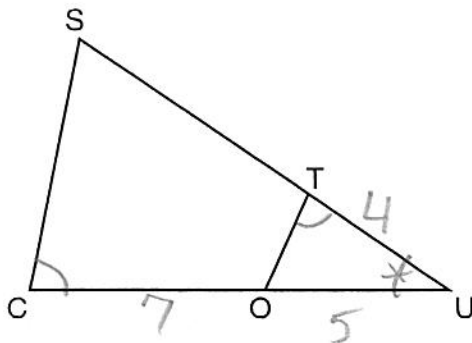
- (2) 16

- (4) 32

$$C = \pi d = \pi 20 \approx 62.83185$$

$$1000 / 62.83185 = 15.9 \text{ she can only make 15}$$

- 24 In  $\triangle SCU$  shown below, points  $T$  and  $O$  are on  $\overline{SU}$  and  $\overline{CU}$ , respectively. Segment  $OT$  is drawn so that  $\angle C \cong \angle OTU$ .



$$\frac{12}{4} = \frac{x}{5}$$

$$4x = 60$$

$$x = 15$$

$$ST = 15 - 4 = 11$$

If  $TU = 4$ ,  $OU = 5$ , and  $OC = 7$ , what is the length of  $\overline{ST}$ ?

- (1) 5.6

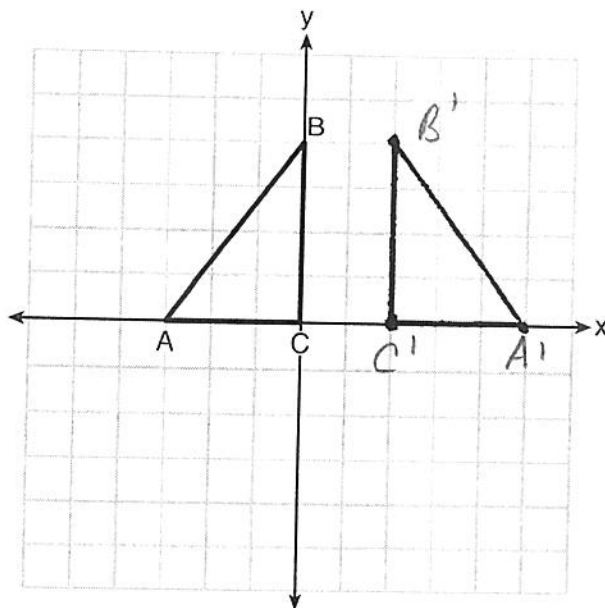
- (3) 11

- (2) 8.75

- (4) 15

Question 25

- 25 Triangle  $ABC$  is graphed on the set of axes below. Graph and label  $\triangle A'B'C'$ , the image of  $\triangle ABC$  after a reflection over the line  $x = 1$ .



$A' (3, 0)$

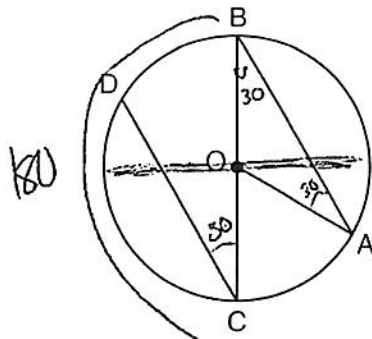
$B' (2, 4)$

$C' (2, 0)$

**Score 2:** The student graphed the image of  $\triangle ABC$  correctly, then stated and labeled its coordinates.

Question 26

26 In the diagram below of circle  $O$  with diameter  $\overline{BC}$  and radius  $\overline{OA}$ , chord  $\overline{DC}$  is parallel to chord  $\overline{BA}$ .



If  $m\angle BCD = 30^\circ$ , determine and state  $m\angle AOB$ .

$$m\angle AOB = 120$$

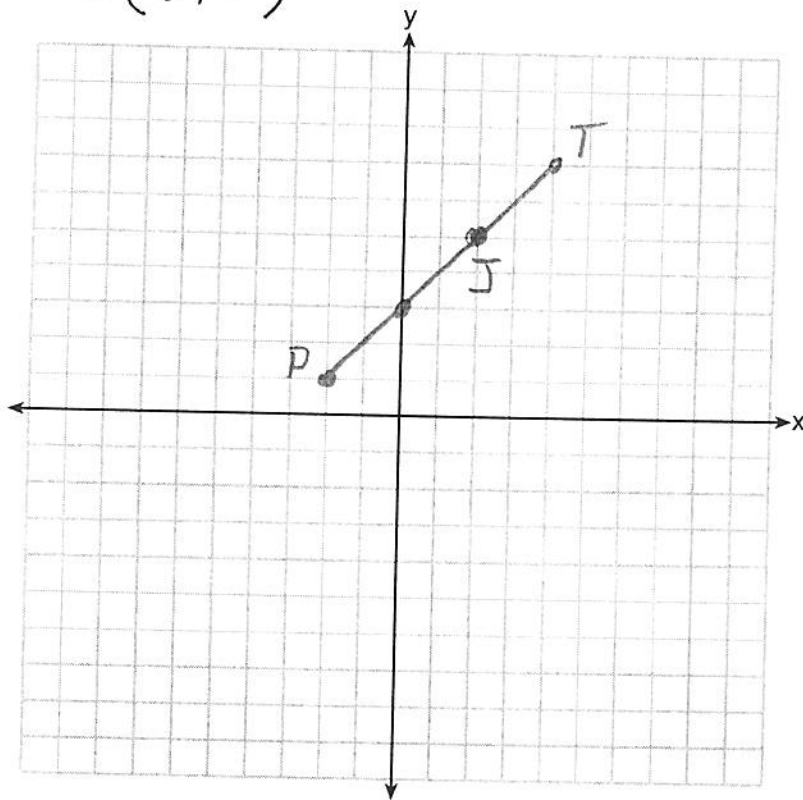
$$\begin{array}{r} 30 \\ + 30 \\ \hline 60 \\ 180 \\ - 60 \\ \hline 120 \end{array}$$

**Score 2:** The student has a complete and correct response.

Question 27

- 27 Directed line segment  $PT$  has endpoints whose coordinates are  $P(-2,1)$  and  $T(4,7)$ . Determine the coordinates of point  $J$  that divides the segment in the ratio 2 to 1. [The use of the set of axes below is optional.]

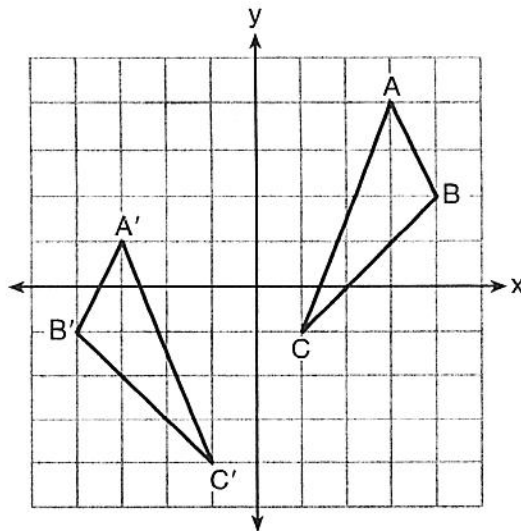
$$\begin{aligned} J &= \left( \frac{2}{3}(4 - (-2)) - 2, \frac{2}{3}(7 - 1) + 1 \right) \\ &= \left( \frac{2}{3}(6) - 2, \frac{2}{3}(6) + 1 \right) \\ &= (4 - 2, 4 + 1) \\ &= (2, 5) \end{aligned}$$



**Score 2:** The student has a complete and correct response.

Question 28

28 As graphed on the set of axes below,  $\triangle A'B'C'$  is the image of  $\triangle ABC$  after a sequence of transformations.



Is  $\triangle A'B'C'$  congruent to  $\triangle ABC$ ? Use the properties of rigid motion to explain your answer.

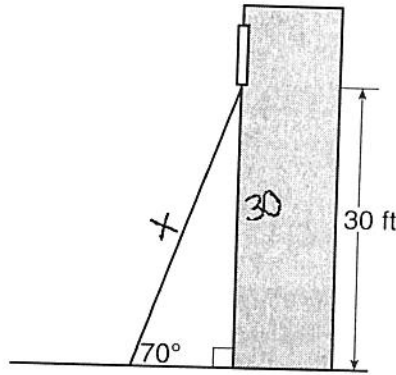
Yes.

$\triangle ABC$  is reflected over the y-axis and then translated down 3. These are rigid motions and in rigid motions distances stay the same.

**Score 2:** The student has a complete and correct response.

Question 29

- 29 A carpenter leans an extension ladder against a house to reach the bottom of a window 30 feet above the ground. As shown in the diagram below, the ladder makes a  $70^\circ$  angle with the ground. To the *nearest foot*, determine and state the length of the ladder.



$$x \cdot \sin 70 = \frac{30}{x} \cdot x$$

$$x \frac{\sin 70}{\sin 70} = \frac{30}{\sin 70}$$

$$x = \frac{30}{\sin 70}$$

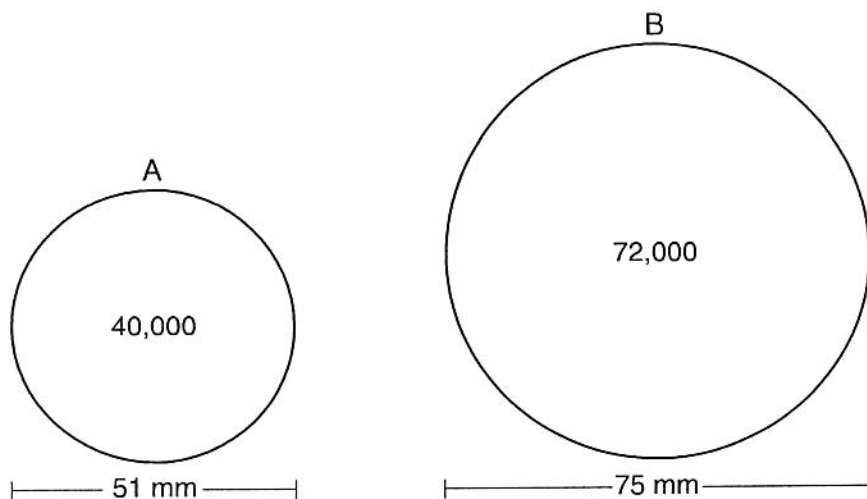
$$x = 32 \text{ ft}$$

The length of the ladder  
is 32 feet.

Score 2: The student has a complete and correct response.

Question 30

- 30 During an experiment, the same type of bacteria is grown in two petri dishes. Petri dish A has a diameter of 51 mm and has approximately 40,000 bacteria after 1 hour. Petri dish B has a diameter of 75 mm and has approximately 72,000 bacteria after 1 hour.



Determine and state which petri dish has the greater population density of bacteria at the end of the first hour.

$$A^A = \pi r^2$$

$$A = \pi 25.5^2$$

$$A = 2042.820623$$

$$2042.820623 \overline{) 40000}$$

$$1958076962$$

$$A^B = \pi r^2$$

$$A = \pi 37.5^2$$

$$A = 4417.864669$$

$$4417.864669 \overline{) 72000}$$

$$16.29746617$$

Petri dish A

Score 2: The student has a complete and correct response.



Question 31

- 31 Line  $\ell$  is mapped onto line  $m$  by a dilation centered at the origin with a scale factor of 2. The equation of line  $\ell$  is  $3x - y = 4$ . Determine and state an equation for line  $m$ .

$$\begin{array}{r} 3x - y = 4 \\ -3x \quad -3x \end{array}$$

$$\frac{-y}{-1} = \frac{-3x + 4}{-1}$$

$$y = 3x - 4$$

$$y = 3x - 8$$

Dilations only effect y intercepts  
b/c dilations preserve parallelism.

Score 2: The student has a complete and correct response.

Question 32

- 32 The aspect ratio (the ratio of screen width to height) of a rectangular flat-screen television is 16:9. The length of the diagonal of the screen is the television's screen size. Determine and state, to the nearest inch, the screen size (diagonal) of this flat-screen television with a screen height of 20.6 inches.

$$\frac{16}{9} = \frac{x}{20.6}$$

$$\frac{16x}{9} = \frac{329.6}{9}$$

$$x = 36.6$$

$$a^2 + b^2 = c^2$$

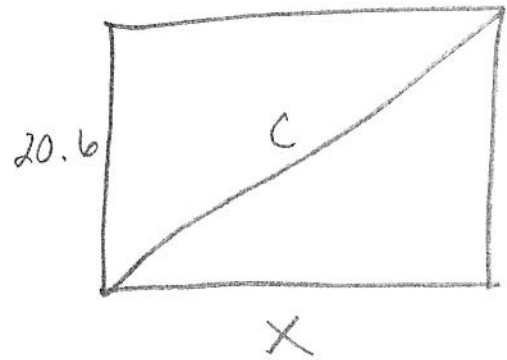
$$36.6^2 + 20.6^2 = c^2$$

$$1339.56 + 424.36 = c^2$$

$$1339.56 + 424.36 = 1763.92$$

$$42$$

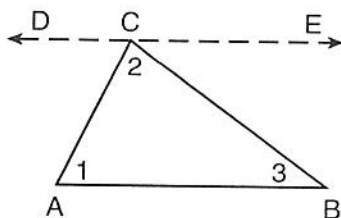
42 inch



**Score 4:** The student has complete and correct work.

### Question 33

33 Given the theorem, "The sum of the measures of the interior angles of a triangle is  $180^\circ$ ," complete the proof for this theorem.



Given:  $\triangle ABC$

Prove:  $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$

Fill in the missing reasons below.

Statements	Reasons
(1) $\triangle ABC$	(1) Given
(2) Through point C, draw $\overline{DCE}$ parallel to $\overline{AB}$ .	(2) <u>an auxiliary line can be drawn</u>
(3) $m\angle 1 = m\angle ACD$ , $m\angle 3 = m\angle BCE$	(3) <u>If lines are parallel, alternate interior angles are congruent</u>
(4) $m\angle ACD + m\angle 2 + m\angle BCE = 180^\circ$	(4) <u>if angles form a straight line it equals <math>180^\circ</math></u>
(5) $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$	(5) <del>sum of angles in a triangle equals <math>180^\circ</math></del> 5) <u>Substitution property</u>

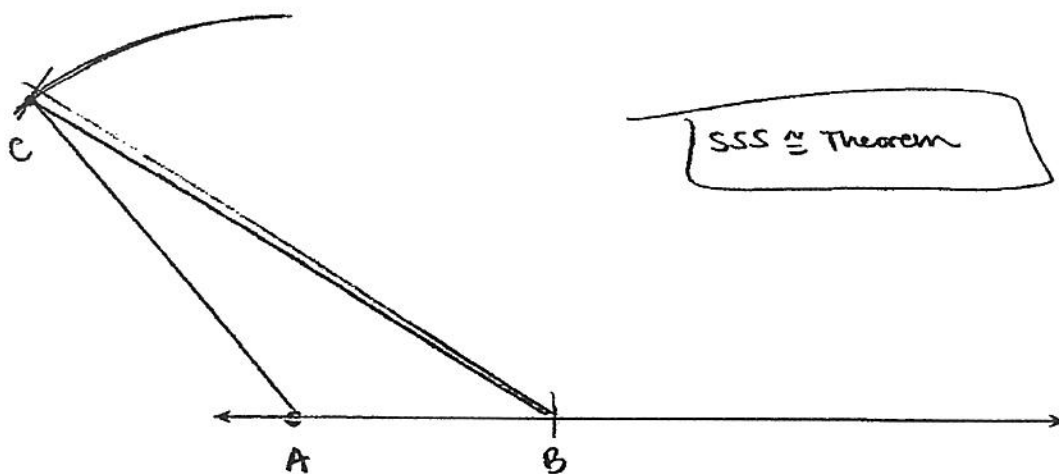
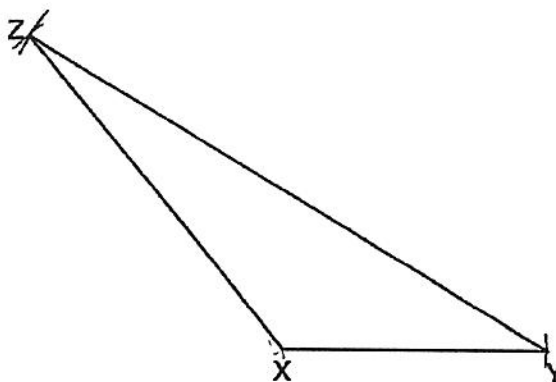
Score 3: The student had three correct reasons.

4

Question 34

34 Triangle  $XYZ$  is shown below. Using a compass and straightedge, on the line below, construct and label  $\triangle ABC$ , such that  $\triangle ABC \cong \triangle XYZ$ . [Leave all construction marks.]

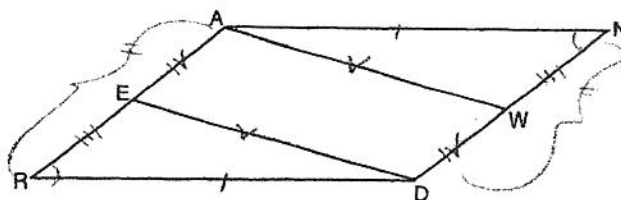
Based on your construction, state the theorem that justifies why  $\triangle ABC$  is congruent to  $\triangle XYZ$ .



**Score 4:** The student has a complete and correct response.

Question 35

- 35 Given: Parallelogram  $ANDR$  with  $\overline{AW}$  and  $\overline{DE}$  bisecting  $\overline{ND}$  and  $\overline{RA}$  at points  $W$  and  $E$ , respectively



Prove that  $\triangle ANW \cong \triangle DRE$ .

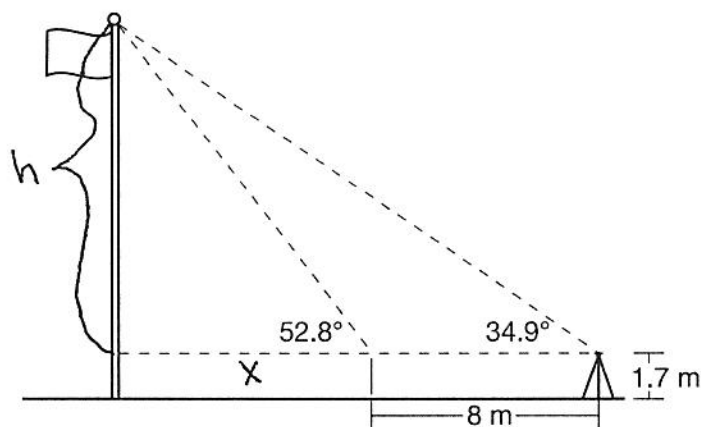
Prove that quadrilateral  $AWDE$  is a parallelogram.

Statements	Reasons
① Parallelogram $ANDR$ with $\overline{AW}$ and $\overline{DE}$ bisecting $\overline{ND}$ and $\overline{RA}$ at points $W$ and $E$ respectively.	① Given
② $\overline{AE} \cong \overline{RE}$ , $\overline{DW} \cong \overline{NW}$	② A segment bisector cuts a segment into two $\cong$ parts
③ $\overline{RA} \cong \overline{DN}$ , $\overline{RD} \cong \overline{NA}$	③ In a parallelogram, opposite sides are $\cong$
④ $\overline{RE} \cong \overline{NW}$	④ Halves of $\cong$ segments are $\cong$
⑤ $\angle R \cong \angle N$	⑤ In a parallelogram, opposite angles are $\cong$ .
⑥ $\triangle DRE \cong \triangle ANW$	⑥ SAS $\cong$ SAS
⑦ $\overline{ED} \cong \overline{WA}$	⑦ CPCTC
⑧ $\overline{AE} \cong \overline{DW}$	⑧ Halves of $\cong$ segments are $\cong$
⑨ Quad. $AWDE$ is a parallelogram	⑨ If both pairs of opposite sides are $\cong$ , the quad is a parallelogram.

Score 6: The student has a complete and correct proof.

Question 36

- 36 Cathy wants to determine the height of the flagpole shown in the diagram below. She uses a survey instrument to measure the angle of elevation to the top of the flagpole, and determines it to be  $34.9^\circ$ . She walks 8 meters closer and determines the new measure of the angle of elevation to be  $52.8^\circ$ . At each measurement, the survey instrument is 1.7 meters above the ground.



Determine and state, to the nearest tenth of a meter, the height of the flagpole.

$$\begin{aligned} \tan 52.8 &= \frac{h}{x} & \tan 34.9 &= \frac{h}{x+8} \\ x \tan 52.8 &= h & (x+8) \tan 34.9 &= h \end{aligned}$$

$$\begin{array}{r} x \tan 52.8 = x \tan 34.9 + 8 \tan 34.9 \\ - x \tan 34.9 \quad - x \tan 34.9 \\ \hline \end{array}$$

$$x \tan 52.8 - x \tan 34.9 = 8 \tan 34.9$$

$$x (\tan 52.8 - \tan 34.9) = 8 \tan 34.9$$

$$\frac{0.6198416839}{0.6198416839} x = \frac{8 \tan 34.9}{0.6198416839}$$

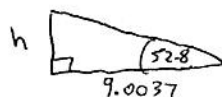
$$x = 9.003714087$$

$$\tan 52.8 = \frac{h}{9.003714087}$$

$$h = 9.003714087 \tan 52.8$$

$$\begin{aligned} h &= 11.86195525 \\ &+ 1.7 \end{aligned}$$

$$\text{height} = 13.56195525$$



height = 13.6 m

Score 6: The student has a complete and correct response.