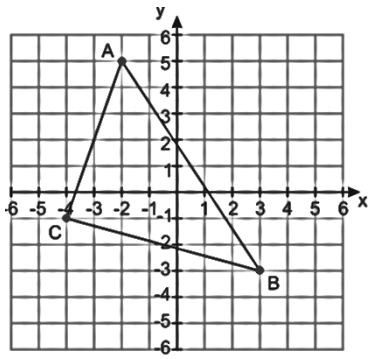
Geometry EOC Study Guide

Directions: Select the best answer.

1) Which of the following would **NOT** be true if ΔABC was stretched horizontally by a scale factor of 2?



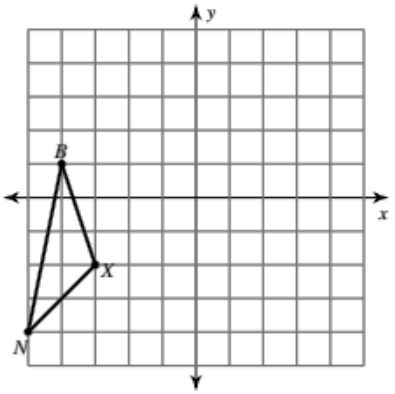
A) The rule (x, y) → ‘(2x, y) would represent this transformation.

B) The transformation would preserve distance but not the angle measures.

C) A’ would be represented by the ordered pair of (–4, 5).

D) ΔABC would remain a scalene triangle.

2) Which of the following would NOT be true given the figure below?



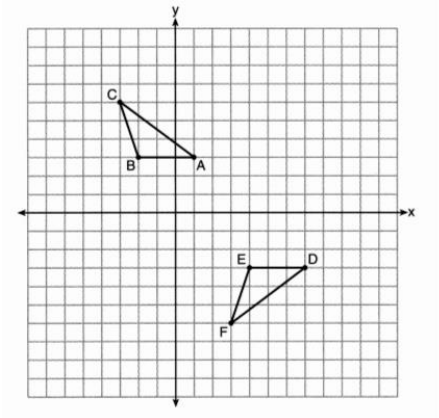
A) If ΔBXN were translated by the rule (x, y) → (x – 3, y + 2), B’ would be represented by the ordered pair (–7, 3).

B) If ΔBXN were rotated 90°CW about (–4, 1), X’ would be represented by the ordered pair (–7, 0).

C) If ΔBXN were dilated by a scale factor of 3 with a center of dilation at (–1, 2), N’ would be represented by the ordered pair (–11, –20).

D) ΔBXN were reflected over the line y = x, B’ would be represented by the ordered pair (1, –4).

3) What would map ΔABC to ΔDEF if two transformations were used?



A) A reflection over x = 1 and the translation of (x + 3, y – 6) units

B) A reflection over y = 3 and the translation of (x + 6, y – 6) units

C) A rotation of 180°CCW about the origin and the translation 8 units right

D) None of these

4) Which transformation does not result in rigidity?

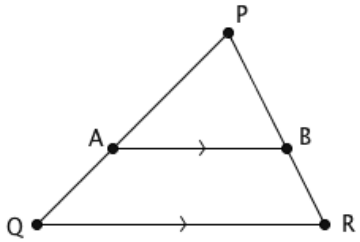
A) (x, y) → ‘(x – 5, y + 1)

B) (x, y) → ‘(–y, –x)

C) (x, y) → ‘(x, $\frac{1}{2}$y)

D) (x, y) → ‘(–y, x + 2)

5) In the figure below, if PB = 12, RB = 9, AP = x + 4, and QA = 2x, what is the length of $\overline{AP}$?



A) 6.4

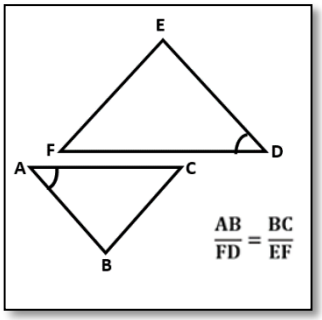
C) 9

B) 13

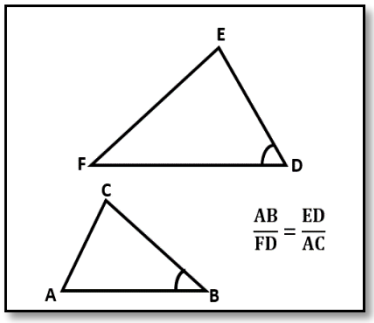
D) 7.6

6) Which set of figures has enough information to prove that ΔABC ~ ΔDEF by SAS~ postulate?

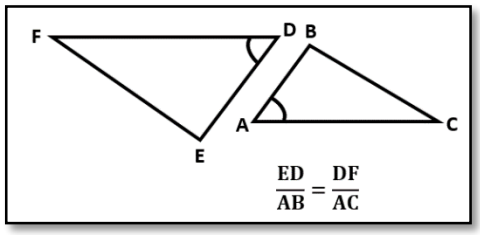
A)



B)



C)



D) None of these figures

7) What is the construction being created below, and after this step in the construction is completed, what is the following step?

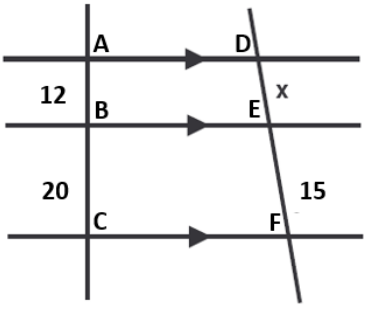
A) circumscribed regular pentagon; create a perpendicular bisector

B) inscribed equilateral triangle; connect every other point using a straightedge

C) circumscribed regular hexagon; connect every point using a straightedge

D) inscribed square; create the perpendicular bisectors from each arc and circle Intersection

8) What is DF in the figure below?



A) 24

B) 21

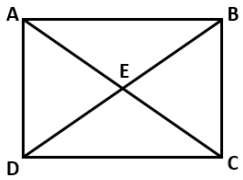
C) 32

D) 8

9) In an isosceles triangle, the ratio of the vertex angle to the base angle is 5:2. What is the measure of the vertex angle?

A) 75° B) 30° C) 100° D) 45°

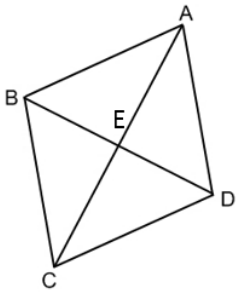
10) ABCD is a rectangle. If DB = 16, what is AE?



A) 16 C) 32

B) 8 D) 4

11) ABCD is a rhombus. m∠ABD = 47° and BC = 18. What is m∠DAB and the PERIMETER of ABCD?



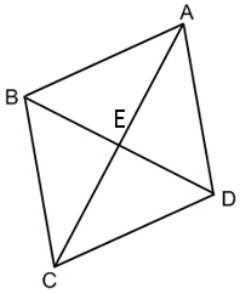
A) m∠DAB = 86° and Perimeter_{ABCD} = 72

B) m∠DAB = 94° and Perimeter_{ABCD} = 72

C) m∠DAB = 66.5° and Perimeter_{ABCD} = 324

D) None of these

12) Sadie has already proven that $\overline{BC} \cong \overline{AD}$ and $\angle DAC \cong \angle BCA$. What additional statement will help Sadie prove ABCD is a parallelogram?



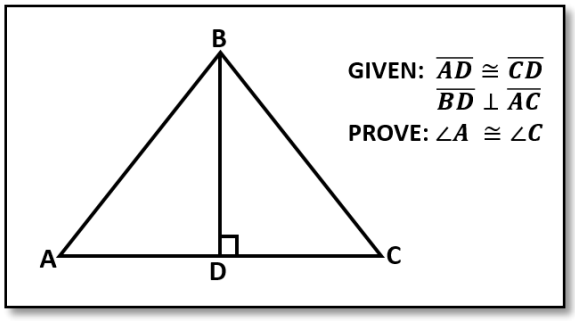
A) $\overline{AB} \cong \overline{BC}$

B) $\overline{AD} \parallel \overline{BC}$

C) $\angle ADC \cong \angle CBA$

D) None of these

13) Which set of statements would not be used to complete the proof?



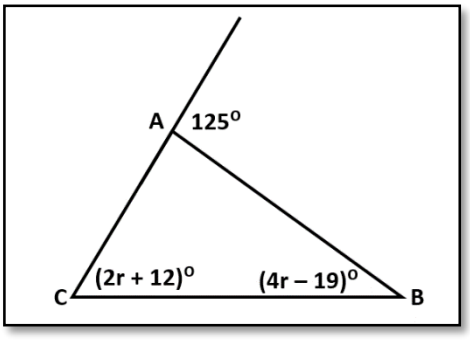
A) ΔABD ≅ ΔCBD by HL Congruence

B) $\angle A \cong \angle C$ by CPCTC

C) ∠ADB and ∠CDB are right angles as perpendicular lines form right angles

D) $\overline{BD} \cong \overline{BD}$ by the reflexive property

14) What is the measure of ∠B in the figure?



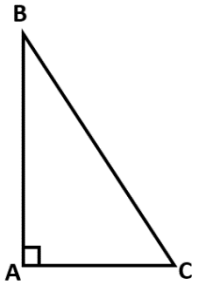
A) 69°

B) 72°

C) 56°

D) 22°

15) If BC = 24 and AC = 9, what is m∠B to the nearest degree?



A) 22^o

B) 36^o

C) 41^o

D) none of these

16) An airplane that is flying in the sky is 20,000 feet away from a landing strip. The current angle of depression from the airplane to the landing strip is 20^o. What is the altitude of the airplane to the nearest foot?

A) 18794 feet

B) 6840 feet

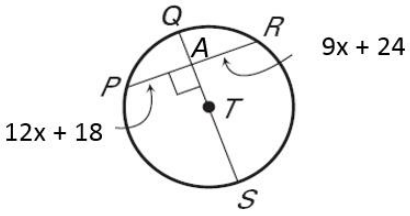
C) 58476 feet

D) 21284 feet

17) What trigonometric ratio has the same value as $\cos 48^o$?

A) $\tan 48^o$ B) $\sin 48^o$ C) $\tan 42^o$ D) $\sin 42^o$

18) If AT = 56, what is the measure of the radius in the figure below? The figure is not drawn to scale.



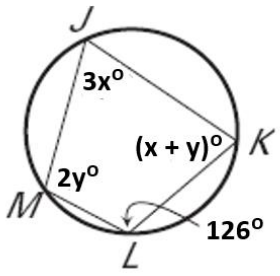
A) 35 units

B) 70 units

C) 51 units

D) 47 units

19) What is m∠M?



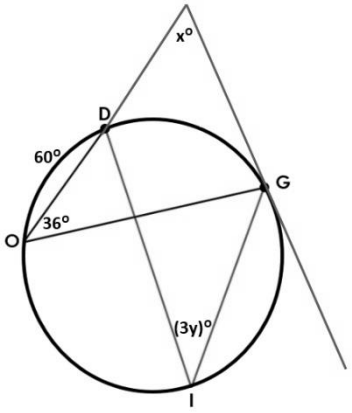
A) 58^o

B) 112^o

C) 108^o

D) 72^o

20) What is the value of x and y in the figure below?



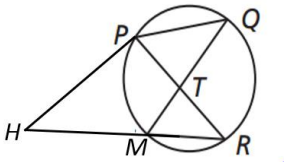
A) x = 72 and y = 24

B) x = 72 and y = 13

C) x = 144 and y = 12

D) x = 78 and y = 12

21) In the figure below, T is NOT the center of the circle. PT = 20, TQ = 4y, TM = 8, TR = 16, PH = 18, HM = 12, & MR = x. What are the values of x and y?



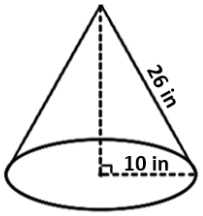
A) x = 12 and y = 15

B) x = 15 and y = 10

C) x = 8 and y = 10

D) x = 11.5 and y = 12

22) What is the exact volume of the cone below?



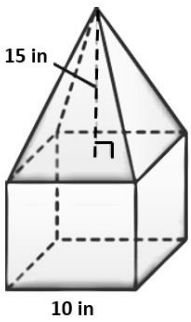
A) $\frac{2600\pi}{3}$ in^3

B) 2600π in^3

C) 800π in^3

D) 2400π in^3

23) A cement block is made by pouring concrete into a mold in the shape of the figure below. In this mold, the base of the pyramid aligns perfectly to a side of the cube. What is the volume of the cement?



A) 1500 in^3

B) 500 in^3

C) 1375 in^3

D) 2500 in^3

24) Line *a* is represented by the equation 2x + 5y = –10. Line *a* and line *b* intersect at the point (5, –4). If $a \perp b$, what is the equation that represents line *b*?

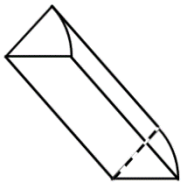
A) –5x + 2y = –33

B) $y = -\frac{2}{5}x - 2$

C) 4x – 5y = –10

D) None of these

25) A prism has a base that is a sector of a circle. The central angle of this sector is 40^o. The radius of the circle is 12 inches. If the height of this prism is 10 inches, what is the volume of this prism? (Remember that V = Bh).



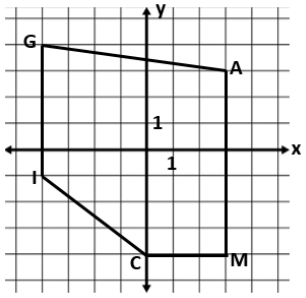
A) 160π in^3

B) 2880π in^3

C) 800π in^3

D) 2400π in^3

26) What is the perimeter of polygon MAGIC to the nearest whole number?



A) 25 units

B) 27 units

C) 31 units

D) 34 units

27) Which set of information is true if given the equation of the circle?

A) The equation of Circle A is $(x-3)^2+(y-4)^2=16$.

This means the center of Circle A is $(-3,-4)$.

B) The equation of Circle B is $(x-12)^2+(y+1)^2=4$.

This means the radius of Circle B is 4.

C) The equation of Circle C is $x^2+y^2-2x+4y-20=0$.

This means the center of Circle C is $(1,-2)$.

D) The equation of Circle D is $(x-5)^2+(y+2)^2=4$.

This means that x = 4 is tangent to Circle D.

28) A bag of skittles of contains 7 red, 3 green, 12 orange, 8 purple, and 5 yellow skittles. A child reaches into this bag and randomly pulls out a skittle and eats it. She then reaches into the bag to grab another skittle and eats it. What is the probability that she has eaten 2 red skittles?

A) $\frac{1}{25}$ B) $\frac{3}{85}$ C) $\frac{6}{175}$ D) $\frac{7}{170}$

29) What is P(kid ∪ no) given that the respondent voted no?

	YES	NO
KID	42	8
ADULT	24	26

A) $\frac{8}{34}$ C) $\frac{13}{17}$

B) 0 D) 1

30) Tate rolled a set of dice and recorded the sum. He then threw a fair coin. What is the probability that the dice sum was 10 and the coin landed on tails?

A) $\frac{1}{4}$ B) $\frac{1}{24}$ C) $\frac{1}{12}$ D) None of these