1. A transversal intersects two lines. Which condition would always make the two lines parallel?

   (1) Same-side interior angles are complementary.
   (2) Alternate interior angles are congruent.
   (3) Corresponding angles are supplementary.
   (4) Vertical angles are congruent.

2. Two congruent angles are supplementary. The measure of each angle is

   (1) 90 (2) 180 (3) 45 (4) 60

3. The image of $A(-1,3)$ under the translation $T_{2,1}$ is

   (1) (–3,2) (2) (–2,3) **(3) (1,4)** (4) (0,5)

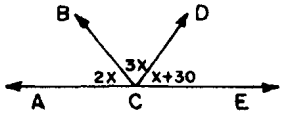
4. Two angles of a triangle measure 72º and 46º. What is the measure of an exterior angle of this triangle?

   (1) 144º (2) 62º (3) 46º **(4) 108º**

5. What are the coordinates of A', the image of point $A(-3,4)$, after a rotation of 180º about the origin?

   (1) (4,–3) **(2) (3,–4)** (3) (3,4) (4) (–4,–3)

6. In the accompanying figure, $\overleftarrow{ACE}$ is a straight line. If $m\angle ACB = 2x$, $m\angle BCD = 3x$, and $m\angle DCE = x + 30$, find $m\angle BCE$.



   (1) 55 **(2) 130** (3) 125 (4) 50

7. If translation T maps point $A(-3,1)$ onto point $A'(5,5)$, which is the translation T?

   (1) $T_{2,6}$ (2) $T_{2,4}$ (3) $T_{8,6}$ **(4) $T_{8,4}$**

8. When writing a geometric proof, which angle relationship could be used alone to justify that two angles are congruent?

   (1) supplementary angles **(2) vertical angle**
   (3) linear pair of angles (4) adjacent angles

9. The center of the circle that can be circumscribed about a scalene triangle is located by constructing the

   (1) altitudes of the triangle
   (2) medians of the triangle
   (3) perpendicular bisectors of the sides of the triangle
   (4) angel bisectors of the triangle

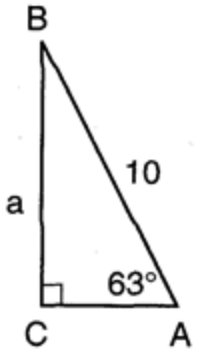
10. The point (3,-2) is rotated 90° about the origin and then dilated by a scale factor of 4. What are the coordinates of the resulting image?

    (1) (-12,8) (2) (12,-8) (3) (-8,-12) **(4) (8,12)**

11. When two parallel lines are cut by a transversal, which angles are *not* always congruent?

(1) two interior angles on the same side of the transversal
(2) two corresponding angles
(3) a pair of alternate exterior angles
(4) a pair of alternate interior angles

12. In right triangle ABC, $m\angle C = 90$, $m\angle A = 63$ and $AB = 10$. If BC is represented by a, then which equation can be used to find a?



(1) $a = \tan 27°$
(2) $\tan 63° = \frac{a}{10}$
(3) $a = 10\cos 63°$
(4) $\sin 63° = \frac{a}{10}$

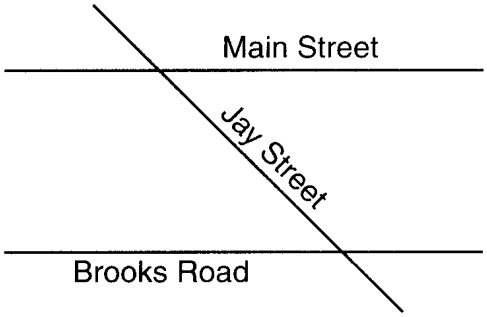
13. Which transformation is *not* an isometry?

(1) line reflection
(2) dilation
(3) rotation
(4) translation

14. If the measure of an angle is represented by $2x$, which expression represents the measure of its complement?

(1) $90 + 2x$ (2) $88x$ **(3)** $\mathbf{90 - 2x}$ (4) $180 - 2x$

15. The accompanying diagram shows two parallel streets, Main Street and Brooks Road, intersected by Jay Street. The obtuse angle that Jay Street forms with Brooks Road is three times the measure of the acute angle that Jay Street forms with Main Street.



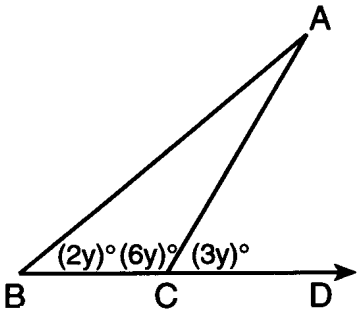
What is the measure of the acute angle formed by Jay Street and Main Street?

(1) 45° (2) 135° (3) 60° (4) 90°

16. A translation moves $P(3,5)$ to $P'(6,1)$. What are the coordinates of the image of point (–3,–5) under the same translation?

(1) (–6,–1) (2) (–5,–3) **(3) (0,–9)** (4) (–6,–9)

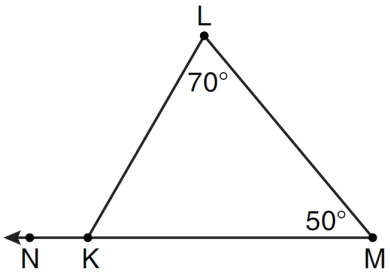
17. In the accompanying diagram of ΔABC, *side* $\overline{BC}$ *is extended to D,* $m\angle B = 2y$, $m\angle BCA = 6y$, *and* $m\angle ACD = 3y$.



What is $m\angle A$?

(1) 20 (2) 24 (3) 15 (4) 17

18. In the diagram of ΔKLM *below,* $m\angle L = 70$, $m\angle M = 50$ *and* $\overline{MK}$ *is extended through N.*



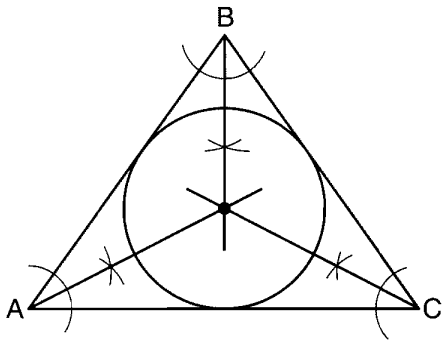
What is the measure of $\angle LKN$?

(1) 120° (2) 180° (3) 60° (4) 300°

19. What is the image of point (1,1) under $r_{x\text{–axis}} \circ R_{0,90°}$?

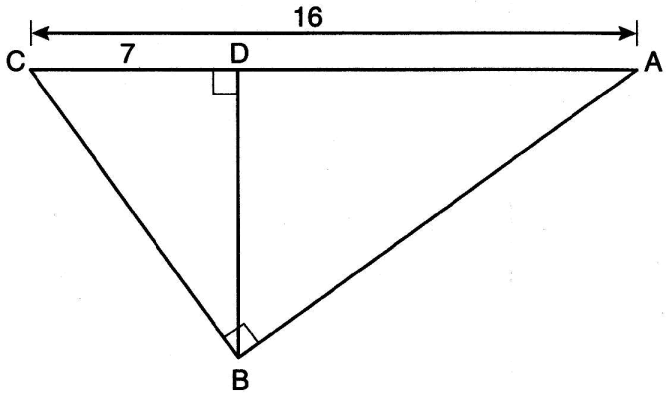
(1) (–1,–1) (2) (–1,1) (3) (1,–1) (4) (1,1)

20. Which geometric principle is used in the construction shown below?



(1) The intersection of the perpendicular bisectors of the sides of a triangle is the center of the circumscribed circle.
(2) The intersection of the perpendicular bisectors of the sides of a triangle is the center of the inscribed circle.
(3) The intersection of the angle bisectors of a triangle is the center of the circumscribed circle.
(4) The intersection of the angle bisectors of a triangle is the center of the inscribed circle.

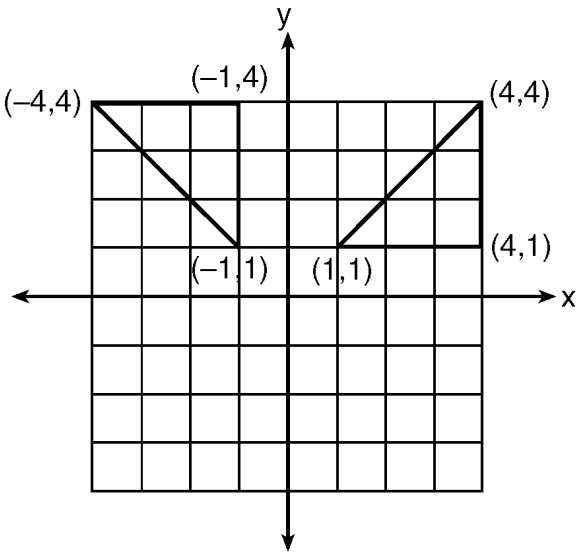
21. In the diagram below of right triangle ABC, altitude $\overline{BD}$ is drawn to hypotenuse $\overline{AC}$, AC = 16, and CD = 7.



What is the length of $\overline{BD}$?

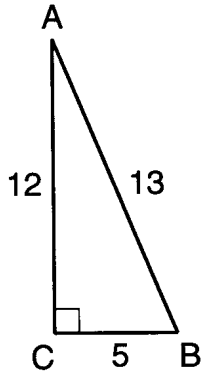
(1) $3\sqrt{7}$ (2) 12 (3) $4\sqrt{7}$ (4) $7\sqrt{3}$

22. Which type of transformation is illustrated in the accompanying diagram?



(1) rotation (2) reflection (3) translation (4) dilation

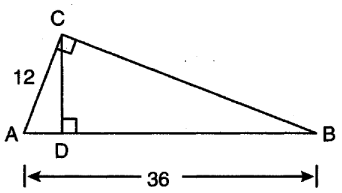
23. In the accompanying diagram of right triangle *ABC*, legs *AC* and *BC* are 12 and 5, respectively, and hypotenuse *AB* is 13.



What is tan *B*?

(1) $\frac{5}{13}$ (2) $\frac{12}{13}$ **(3)** $\frac{12}{5}$ (4) $\frac{5}{12}$

24. In the diagram below of right trangle *ACB*, altitude $\overline{CD}$ is drawn to hypotenuse $\overline{AB}$.



If *AB* = 36 and *AC* = 12, what is the length of AD?

(1) 6 (2) 32 (3) 3 **(4) 4**

Answer Key

May1 Mock Regents Review

1. **2**
2. **1**
3. **3**
4. **4**
5. **2**
6. **2**
7. **4**
8. **2**
9. **3**
10. **4**
11. **1**
12. **4**
13. **2**
14. **3**
15. **1**
16. **3**
17. **1**
18. **1**
19. **1**
20. **4**
21. **1**
22. **1**
23. **3**
24. **4**