The circumcentre and perpendicular bisectors worksheet – Grade 10

Grade 10 · Mixed level · 20 questions · **Version X3318**

Name: _____ Date: _____ Score: ___ / 20

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Write it like (−3, 5).

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1. Where is the circumcentre of a right triangle?

   A. At the midpoint of the hypotenuse **B.** At the right-angle vertex

   C. Outside the triangle **D.** At the centroid

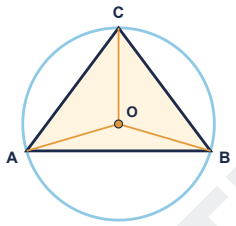
2. Where is the circumcentre of an obtuse triangle?

   A. Outside the triangle **B.** Inside the triangle **C.** At a vertex **D.** On the shortest side

3. A right triangle has sides 6, 8 and 10. What is its circumradius?

   Answer: _____

4. O is the circumcentre of △ABC, and OA = 18 cm. How long is OB, in cm?



   Answer: _____ cm

5. A right triangle has a hypotenuse of 40 cm. What is the radius of the circle through its corners, in cm?

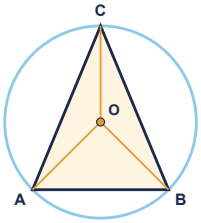
   Answer: _____

6. A right triangle has a circumradius of 4 cm. How long is its hypotenuse, in cm?

   Answer: _____ cm

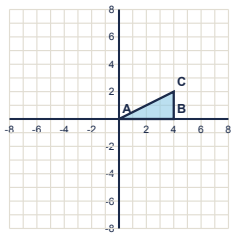
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7. Which lines meet at the circumcentre?



A. Perpendicular bisectors of the sides **B.** Medians **C.** Altitudes **D.** Angle bisectors

8. What is the circumcentre of the right triangle (0, 0), (4, 0), (4, 2)?

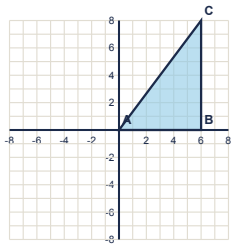


Answer: _____

9. Three towns want a cell tower the same distance from each. Which point should they use?

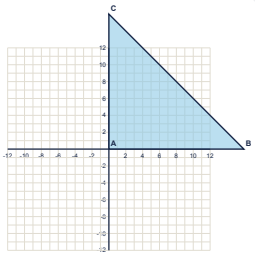
A. The circumcentre **B.** The incentre **C.** The centroid **D.** The orthocentre

10. Find the circumcentre of the right triangle (0, 0), (6, 0), (6, 8).



Answer: _____

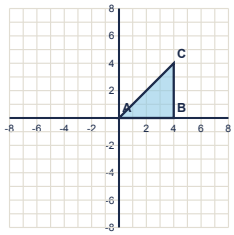
11. A cell tower is equally far from towns at (0, 0), (16, 0) and (0, 16), in km. Where should it go?



Answer: _____

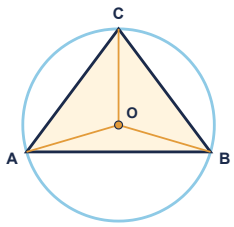
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12. Work out the circumcentre of the right triangle (0, 0), (4, 0), (4, 4).



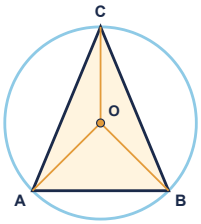
Answer: _____

13. O is the circumcentre of △ABC, and ∠A = 55°. What is ∠BOC, in degrees?



Answer: _____ °

14. A triangle has sides 13, 13 and 10 and area 60. Using R = abc ÷ (4 × area), what is its circumradius? Give your answer to two decimal places.



Answer: _____

15. O is the circumcentre of △ABC, with OA = 6 and BC = 6. How far is O from BC? Give your answer to two decimal places.

Answer: _____

16. Which triangle has its circumcentre on one of its sides?

A. A right triangle **B.** An acute triangle **C.** An obtuse triangle **D.** Any triangle

17. What is the equation of the perpendicular bisector of (-6, 1) and (6, 1)? Give the value of x.

Answer: _____

18. What is the circumcentre of (0, 0), (10, 0) and (10, 10)?

Answer: _____

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19. Work out the circumcentre of (0, 0), (22, 0) and (22, 22).

    Answer: _____

20. A circle passes through (-6, 0), (6, 0) and (0, 6). What is its radius?

    Answer: _____

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Answer key · Version X3318

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1. **A (At the midpoint of the hypotenuse)**
2. **A (Outside the triangle)**
3. **5**
4. **18**
5. **20**
6. **8**
7. **A (Perpendicular bisectors of the sides)**
8. **(2, 1)**
9. **A (The circumcentre)**
10. **(3, 4)**
11. **(8, 8)**
12. **(2, 2)**
13. **110**
14. **7.04**
15. **5.2**
16. **A (A right triangle)**
17. **0**
18. **(5, 5)**
19. **(11, 11)**
20. **6**

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