

**Coconino Institute of Technology  
Practice Entrance Assessment**

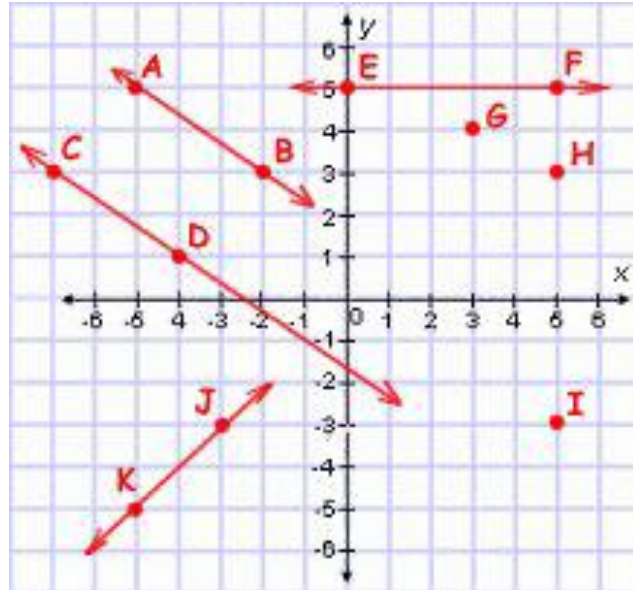


*The following questions are similar to the types of problems you will see when you test to get into CIT. The answer key is included. The actual entrance assessment will be multiple choice. Please bring your FUSD iPad (if applicable) and a scientific calculator to the test. Good luck!*

**Directions: Solve for X.**

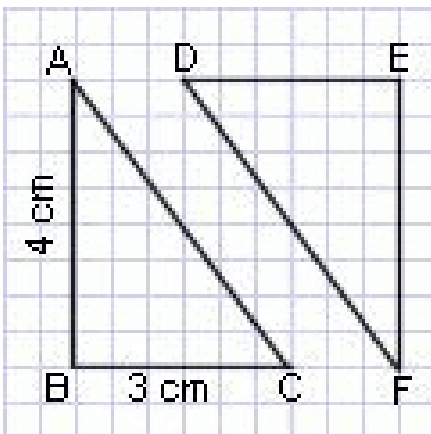
1.  $14 = x + 12$  Answer: \_\_\_\_\_
  
2.  $2 = x/2$  Answer: \_\_\_\_\_
  
3.  $x + 3 > 7$  Answer: \_\_\_\_\_
  
4.  $2x = -3$  Answer: \_\_\_\_\_
  
5.  $8x = -64$  Answer: \_\_\_\_\_
  
6. Find speed in ft/sec when distance = 10 ft and t = 5 seconds. Answer: \_\_\_\_\_
  
7.  $10 = -5x$  Answer: \_\_\_\_\_
  
8.  $15 = 10 - x$  Answer: \_\_\_\_\_
  
9.  $5^x = 25$        $x = ?$  Answer: \_\_\_\_\_
  
10. Evaluate  $3x^2 - 2x$  when  $x = -3$  Answer: \_\_\_\_\_
  
11. Evaluate  $5x^3 + 7x^2$  when  $x = 2$  Answer: \_\_\_\_\_
  
12. Simplify  $2x^2 + 3x^3 - 4x^2$  Answer: \_\_\_\_\_
  
13. Simplify  $x^3 - 2x^2(x+1)$  Answer: \_\_\_\_\_

Use the graph below to answer questions 14-21.



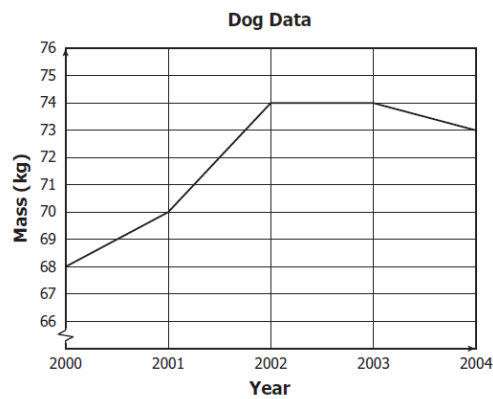
14. What are the coordinates of point I? Use (X,Y) format. Answer: \_\_\_\_\_
15. What is the slope of line EF? Answer: \_\_\_\_\_
16. What are the coordinates of point G? Use (X,Y) format. Answer: \_\_\_\_\_
17. What are the coordinates of point H? Use (X,Y) format. Answer: \_\_\_\_\_
18. What is the slope of line JK? Answer: \_\_\_\_\_
19. What is the y-intercept of line EF? Answer: \_\_\_\_\_
20. What is the equation for line EF? (Remember  $y = mx + b$ ) Answer: \_\_\_\_\_
21. What is the equation for line JK? Answer: \_\_\_\_\_
22. What is the equation for line CD? Answer: \_\_\_\_\_
23. What is the equation for line AB? Answer: \_\_\_\_\_

Use the picture below to answer questions 24-27.

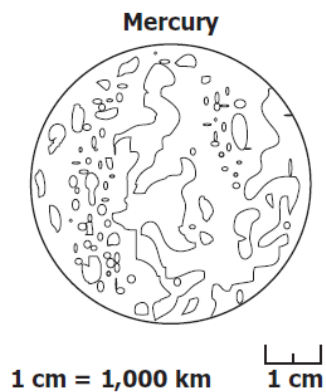


24. What is the length of the hypotenuse of triangle ABC? Answer: \_\_\_\_\_
25. What is the length of side DE? Answer: \_\_\_\_\_
26. What is the length of side EF? Answer: \_\_\_\_\_
27. What is the length of the hypotenuse of triangle DEF? Answer: \_\_\_\_\_

28.  $3.5 \times 0.72 = ?$  Answer: \_\_\_\_\_
29.  $-64/0.8 = ?$  Answer: \_\_\_\_\_
30. What is the square root of 121? Answer: \_\_\_\_\_
31. What is 15% of 65? Answer: \_\_\_\_\_
32. Solve  $13^2$ . Answer: \_\_\_\_\_
33. What is the average of this set of data: 4.5, 4.8, 5.2, 4.2, 5.0? Answer: \_\_\_\_\_
34. This graph shows data about a dog. Describe what the data shows.



35. A student predicts that similar ice cubes will melt faster in a microwave than in a pot on the stove. How should this hypothesis be tested?
36. A scale model of the planet Mercury is shown. Based on the scale, what is the diameter of Mercury?



37. A student suspects that there is a relationship between the amount of sunny weather in a given state and the amount of solar energy used by its inhabitants. In order to find out if this information is correct, what information will the student need from each state?

**Answers:**

1.  $x = 2$
2.  $x = 4$
3.  $x > 4$
4.  $x = -3/2$
5.  $x = -8$
6.  $2 \text{ ft/s}$
7.  $x = -2$
8.  $x = -5$
9.  $x = 2$
10. 33
11. 68
12.  $3x^3 - 2x^2$  or  $x^2(3x-2)$
13.  $-x^2(x+2)$
14. (5, -3)
15. 0
16. (3, 4)
17. (5, 3)
18.  $1/1$
19. 5
20.  $y = (0)x + 5$
21.  $y = 1(x) + 0$
22.  $y = (-2/3)x - (5/3)$
23.  $y = (-2/3)x + (5/3)$
24. 5 cm
25. 3 cm
26. 4 cm
27. 5 cm
28. 2.52
29. -80
30. 11
31. 9.75
32. 169
33. 4.74
34. Gained mass for first two years, stayed the same for 3<sup>rd</sup>, lost mass 4<sup>th</sup>
35. Design an experiment to measure time to melt
36. About 5000 km
37. The number of sunny days per year and the amount of solar energy used per year