

13. The thermostat on a freezer is set at  $-18^{\circ}\text{C}$ . The compressor on the freezer turns on and cools down the freezer when the temperature rises to  $-15.5^{\circ}\text{C}$ . The compressor turns off when the temperature drops to  $-19.5^{\circ}\text{C}$ .

- a) Sketch a thermometer and mark the 3 freezer temperatures.  
 b) A package of meat must remain below  $-18^{\circ}\text{C}$ . Should this freezer be used? Explain.



14. Write 3 rational numbers between each pair of numbers. Sketch a number line to show all the rational numbers.

- a)  $\frac{5}{8}, \frac{13}{8}$                       b)  $\frac{17}{10}, -\frac{11}{5}$   
 c)  $-\frac{15}{4}, -\frac{11}{3}$                       d)  $-\frac{1}{2}, -\frac{1}{8}$   
 e)  $\frac{1}{6}, 0.5$                       f)  $-0.25, -\frac{1}{3}$   
 g)  $-\frac{14}{5}, -3$                       h)  $5\frac{3}{5}, 5\frac{4}{5}$

15. Sketch a number line and mark each rational number on it:

$$\frac{3}{5}, -\frac{5}{7}, -\frac{8}{3}, -\frac{19}{5}$$

16. Which rational number is greater? Which strategies did you use to find out?

- a) 2.34, 2.3                      b)  $-2.34, -2.3$   
 c)  $-1.4, 1.4$                       d) 3.96,  $-4.12$   
 e)  $-5.\bar{6}, -5.6$                       f)  $2.8\bar{6}, 2.866$

17. Which rational number is less?

Explain how you know.

- a)  $\frac{3}{4}, \frac{3}{5}$                       b)  $2\frac{1}{2}, -1\frac{7}{8}$   
 c)  $-\frac{13}{10}, -\frac{13}{5}$                       d)  $-\frac{11}{3}, -\frac{5}{6}$

18. Which rational number is greater?

How do you know?

- a)  $\frac{3}{4}, \frac{6}{7}$                       b)  $-\frac{3}{4}, -\frac{6}{7}$   
 c)  $-\frac{6}{7}, -\frac{7}{6}$                       d)  $-\frac{9}{5}, \frac{5}{9}$

19. A student said, "When I compare two numbers, I know that the lesser number is closer to 0." Is this statement always true? Sometimes true? Never true? Explain.

### 20. Assessment Focus

- a) Mark these rational numbers on a number line:

$$1.4, -\frac{11}{8}, -3.6, 4\frac{1}{3}, 0.8, -\frac{17}{3}$$

- b) Which rational numbers in part a are less than  $-1$ ? How do you know?  
 c) Which rational numbers in part a are greater than  $-2$ ? How do you know?  
 d) Write one rational number between each pair of numbers on the number line.

21. Use  $<$ ,  $>$ , or  $=$  to make each expression true. Justify your answers.

- a)  $-\frac{5}{7} \square -\frac{4}{7}$   
 b)  $-\frac{5}{6} \square -\frac{5}{7}$   
 c)  $-2.2 \square -\frac{11}{5}$   
 d)  $-4.4\bar{6} \square -4.46$