

6.30 - Questions Handout #s 4 - 21

Check Your Understanding

Practise

For help with questions 4 to 8, refer to Example 1.

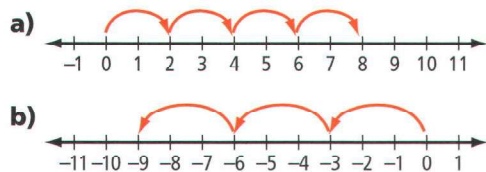
4. Find each product.

- a) 7×6 b) $5 \times (-10)$
c) -4×4 d) -7×8

5. Multiply.

- a) 8×9 b) $2 \times (-9)$
c) -5×3 d) $11 \times (-3)$

6. What integer multiplication does each number line model? Find the result.



7. Multiply.

- a) $-3 \times (-5)$ b) $-8 \times (-4)$
c) $-9 \times (-6)$ d) $-12 \times (-7)$

8. Find each product.

- a) $-7 \times (-2)$ b) $-12 \times (-12)$
c) $-6 \times (-11)$ d) $-11 \times (-11)$

For help with question 9, refer to Example 2.

9. Write each situation as an integer expression using multiplication. State the result and its meaning.

- a) A scuba diver dove down 5 m, then took a rest. She did this 6 times. At what depth was the scuba diver after the 6 dives?
- b) Susan withdrew \$20 from the bank machine on three different days. Her mom deposited the money back into her account. How much did Susan's mother deposit?

For help with questions 10 to 12, refer to Example 3.

10. Predict the sign of each product. Justify your answer. Do not evaluate.

- a) $-21 \times (-18)$
b) $72 \times (-657)$
c) $-2 \times (-3) \times (-1)$
d) $4 \times (-9) \times (-8) \times 5$
e) $-2 \times (-2) \times (-2) \times (-2) \times (-2) \times (-2)$
f) $-5 \times 7 \times (-5) \times 7 \times (-5) \times 7 \times (-5) \times 7$

11. Evaluate each product in question 10.

12. Evaluate each product.

- a) $5 \times (-5) \times (-5)$
b) $10 \times 10 \times (-10)$
c) $-2 \times (-2) \times (-2) \times (-2) \times (-2)$
d) $-3 \times (-5) \times (-4)$
e) $7 \times (-3) \times 10$
f) $-3 \times (-2) \times (-1) \times 11$

13. From your results in questions 10 and 12, state a set of rules that helps you predict the sign of any multiplication statement.

14. Use multiplication to evaluate. What strategy did you use?

- a) $-7 + (-7) + (-7) + (-7) + (-7) + (-7)$
b) $-2 + (-2) + (-2) + (-2) + (-2)$
c) $-13 + (-13) + (-13) + (-13)$
d) $-15 + (-15) + (-15)$

Apply

15. Use a pattern to explain each result.

- a) $3 \times (-5) = -15$
b) $-4 \times (-7) = 28$

16. Write an integer expression using multiplication for each situation. State the result and the meaning of the result.

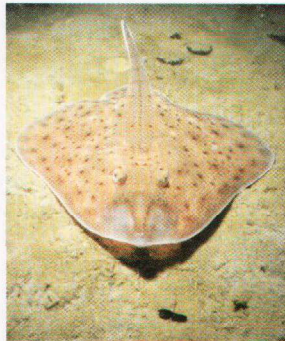
- a)** The temperature rises an average of 2°C every hour. How many degrees does it rise in 4 h?
- b)** In an investment game, Allen lost \$50 in each of 4 turns. How much did he lose?
- c)** A submarine dove at a rate of 25 m/min for 8 min. How far did the submarine dive?
- d)** In a board game, you lose, in points, 100 times the roll of one number cube. How much do you lose with a roll of 4?

17. Write a problem that has a solution of $12 \times (-4)$.

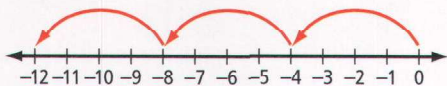
Chapter Problem

18. In a tropical ocean location, the temperature decreases by about 3°C for every 25 m in depth. The temperature at the surface is 25°C .

- a)** What is the water temperature 125 m below the surface?
- b)** The clearnose skate can live in water with temperatures from 6°C to 27°C . How far below the surface can the skate live?



19. Explain how the number line is used to model multiplication of integers.



20. Use a number line to model each integer expression.

- a)** 3×7
- b)** $2 \times (-5)$
- c)** $4 \times (-6)$



21. On the stock market, the price of one share of High Flier Airlines dropped by an average of 15¢ per day over 30 days.

- a)** What was the total price change during the first 5 days?
- b)** What was the total price change over the entire 30-day period?
- c)** You buy shares on the 10th day. How much money will you lose, per share, if you sell them on the 20th day?

Extend

- 22. a)** List the possible combinations of three different integers that have a product of -12 .
- b)** Find all the possible combinations of three different integers whose product is 30.

- 23. a)** Plot the points $A(2, -1)$, $B(-3, -4)$, and $C(-5, 2)$ on a coordinate grid. Join them to form a triangle.
- b)** Multiply the x - and y -coordinates of A , B , and C by 2 and graph the results. Describe the resulting triangle.
- c)** Multiply the x - and y -coordinates of A , B , and C by -2 and graph the results. Describe the resulting triangle.
- d)** Describe what would happen if you multiplied the x -coordinates by 2 and the y -coordinates by -2 .