Name: _____ Date: _____

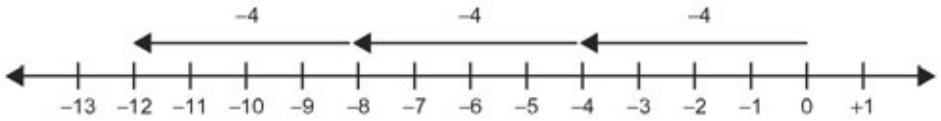
BLM 8–12

# Chapter 8 Test

Do not use a calculator for this test.

*For #1 to #5, select the best answer.*

**1.** Which multiplication does the diagram represent?

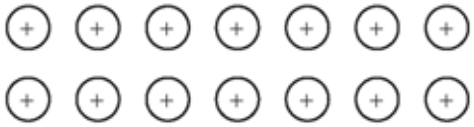



**A** (−4) × (+3) **B** (−3) × (−4) **C** (−3) × (+4) **D** (+4) × (+3)

**2.** Which division could the diagram represent?

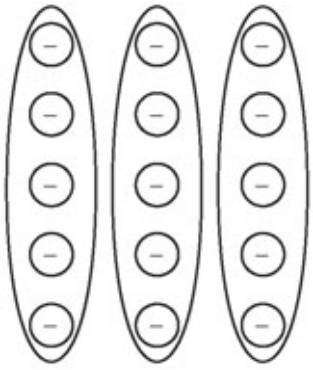

**A** (+24) ÷ (+4) **B** (+24) ÷ (−4) **C** (−24) ÷ (+6) **D** (−24) ÷ (−6)

**3.** What is the final value of this multiplication question?



**A** +14 **B** +7 **C** +2 **D** −14

**4.** What is the final value of this division question?



**A** +5 **B** −3 **C** −5 **D** −15

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## Short Answer

**5.** Water freezes at 0 °C. If water at 97 °C is cooled at a rate of 6 °C per minute, will it be frozen in 16 min? Show a mathematical statement and all your work.

**6.** In your own words, state the sign rules that you would apply to decide whether the answer is positive or negative when you calculate each of the following:

**a)** $(+12) \div (+3)$

**b)** $(-5) \times (+4)$

**7.** A 123-step staircase starts at ground level and leads to the bottom of a cave. If Tiesha starts at the bottom of the cave and walks up three steps per stride, how many strides must she make to reach ground level? Show a mathematical statement and all your work.

**8.** Estimate each product and quotient, then calculate.

**a)** $(-210) \div (+7)$ **b)** $(-36) \times (-8)$

**c)** $(+492) \div (-3)$ **d)** $(+9) \times (-15)$

**e)** $(-312) \div (-4)$ **f)** $(-28) \times (+11)$

**9.** Calculate.

**a)** $(+7) \times (-3) - (-25) \div (-5)$ **b)** $(-39) - (+4) \div (+2) + (+53)$

**c)** $(-56) + (-9) \times (+3) - (-76)$ **d)** $(+42) \div (-7) + (-8) \times (+2)$

## Extended Response

**10.** A hot-air balloon begins at ground level. It then moves up at a rate of 5 m/min. After 17 min, it moves down at a rate of 3 m/min for 6 min. Then, it moves up at a rate of 11 m/min. How high above the ground is the hot-air balloon after 1 h? Show all your work.

**11.** Using each of the integers $(-2)$, $(+8)$, $(-6)$, and $(+1)$ at least once, create four different expressions that include $+$, $-$, $\times$, and $\div$ at least once and result in an answer between $(-10)$ and $(+10)$.

**12.** Water begins leaking into a boat at 3 L/min. After 5 min, a bilge pump begins pumping water out of the boat at 4 L/min. Ten minutes after the pump starts, it begins to rain steadily, which fills the boat at a rate of 2 L/min. How much water is in the boat after half an hour if the rates remain constant? Show all your work.