b) 42 m²; use the height of the rectangle as the height of the triangle

c) 85 cm²; either subtract the area of the central triangle from the area of the trapezoid, or find the area of the two other triangles separately and add them together

6. a) 43 cm² **b)** 31.25 m²

Chapter 6

6.1 Comparing Positive and Negative Numbers

1. −8, −7, −5, −4, −2, −1, 0, +1, +3, +5, +7, +8

2. a) −4, −3, 0, +3, +4
b) −6, −4, −2, +5, +9
c) −98, −6, +1, +22, +35
d) −67, −38, 0, +8, +45
e) −123, −8, +3, +46, +98

3. a) +1   **b)** −2   **c)** −6   **d)** 0
e) −1   **f)** +4   **g)** −1, 0, +1
h) 0

4. a) >   **b)** <   **c)** >   **d)** <
e) >   **f)** >   **g)** <   **h)** >

6.2 An Integer Experiment

1. Ellie is on floor 23.
2. POSITIVELY

6.3 Adding Integers Using the Zero Principle

1. a) +7   **b)** −6   **c)** +8   **d)** −11
2. a) +1   **b)** +2
3. a) −2   **b)** +3   **c)** −2   **d)** +5
4. $3
5. The shaded spaces will show the signs + / −.

6.4 Adding Integers That Are Far from Zero

1. a) (−3) + (−3) = (−6)
b) (−3) + (+2) = (−1)
c) (+2) + (−2) = 0
d) (+3) + (−3) = (0)
e) (+3) + (−1) = (+2)
f) (−5) + (+6) = (+ 1)

2. a) −8   **b)** +7   **c)** +1   **d)** −1
e) +7   **f)** −7

3. a) −15   **b)** −75   **c)** +75   **d)** +15
e) −125   **f)** −75   **g)** +125   **h)** +75
i) −34   **j)** −50   **k)** −20   **l)** −75

6.5 Integer Addition Strategies

1. a) +54   **b)** +92   **c)** −77   **d)** −56
e) +62   **f)** +387   **g)** −8

2. a) −6   **b)** −5   **c)** −25   **d)** +43
e) −6   **f)** −36
3. a) −70   **b)** −70   **c)** −88   **d)** −50
e) −82   **f)** +55
4. a) −10   **b)** +100   **c)** +34   **d)** −50

6.6 Using Counters to Subtract Integers

1. a) −4   **b)** −37   **c)** +6
2. a) +4   **b)** +7   **c)** +8   **d)** +50
e) −6   **f)** +2
3. a) −8   **b)** −1   **c)** −1   **d)** +6
4. ADD THE OPPOSITE.

6.7 Using Number Lines to Subtract Integers

b) (−11) − (+7) = (−18)
c) (−14) − (−26) = (+12)
2. a) −36   **b)** −28   **c)** +28   **d)** +36
e) +12   **f)** −7

6.8 Solve Problems by Working Backwards

1. a) −9   **b)** −12
2. The elevator started on floor 14.
3. Meagan started with $24.75
4. Miguel started at the 4 m level and Yoshi started at the 6 m level.
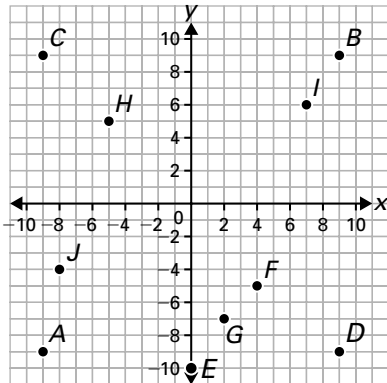**5.** Shailini must leave the house at 11:15 A.M.

Test Yourself

1. a) −4   **b)** +2   **c)** +3   **d)** +7
e) +2   **f)** +13
2. The order of integers on the number lines will be:
a) −5, −3, −1, 0, +5
b) −20, −15, −5, +10, +20
c) −13, −7, −5, +4, +9
3. −17, −5, −4, 0, +1, +2, +8, +17
4. a) <   **b)** >   **c)** >   **d)** >
e) =   **f)** =   **g)** >   **h)** <
i) <   **j)** =
5. a) −7, −10, −13   **b)** +5, +9, +13
c) +6, −7, +8   **d)** 0, +3, +1
6. a) +8   **b)** −15   **c)** +4   **d)** 0
e) −15   **f)** +40   **g)** −40   **h)** +15
i) +98   **j)** +15
7. a) −24   **b)** −3   **c)** −10   **d)** +10
e) −31   **f)** +140   **g)** +6   **h)** +65
i) −102   **j)** +51
8. a) +   **b)** −   **c)** −   **d)** +
9. a) +8   **b)** −7   **c)** −7   **d)** 11
e) 3   **f)** 51
10. (+8) − (−14) = (+22)
11. (−10) + (+14) = (+4)
12. (−3) − (+19) = (−22)
13. a) −2   **b)** −11

14. 24 cookies
15. $(+45) + (+25) + (+15) + (-40) = (+45)$

Chapter 7

7.1 Comparing Positions on a Grid

1. $B(2, 2)$, $C(-2, 3)$, $D(2, 0)$, $E(0, -3)$, $F(-1, -2)$
2. $A(7, -2)$, $B(3, 5)$, $C(-6, 8)$, $D(-4, 0)$, $E(0, 9)$,
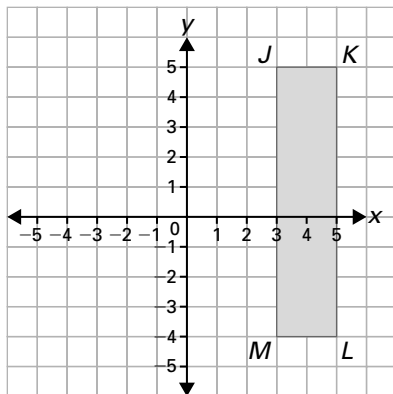 $F(-7, -5)$
3.

7.2 Translations

1. a) $A'(-2, 2)$ **b)** $B'(4, 5)$ **c)** $C'(-1, -1)$
2. $A'(2, -5)$, $B'(2, -1)$, $C'(6, -1)$, $D'(6, -5)$
3. $D'(2, -1)$, $E'(4, 2)$, $F'(6, 0)$
4. a) 4 units to the right
   b) 2 units down and 2 units to the right

7.3 Reflections

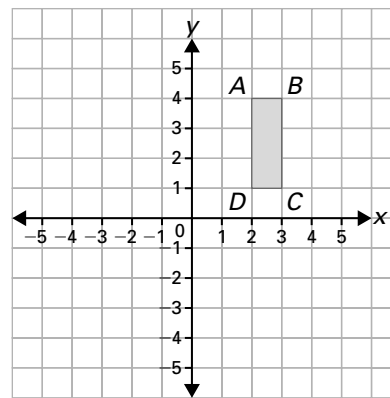**1.** $A'(1, 5)$, $B'(-3, 5)$, $C'(-3, 2)$, $D'(1, 2)$
2. a)

b)
   $J'(3, -5)$, $K'(5, -5)$, $L'(5, 4)$, $M'(3, 4)$
c) $J''(-3, 5)$, $K''(-5, 5)$, $L''(-5, -4)$, $M''(-3, -4)$
3. $Q'(2, 4)$, $R'(3, 1)$, $S'(5, 3)$

7.4 Rotations

1. a) A   **b)** 90°   **c)** ccw

2. a)

b) A' $(4, -2)$, $B'(4, -3)$, $C'(1, -3)$, $D'(1, -2)$
c) $A''(-4, 2)$, $B''(-4, 3)$, $C''(-1, 3)$, $D''(-1, 2)$
d) $A'''(-2, -4)$, $B'''(-3, -4)$, $C'''(-3, -1)$,
   $D'''(-2, -1)$

7.5 Congruence and Similarity

1. The shapes are congruent because they have
   the same shape and size.
2. a) A and C   **b)** D and F
3. The second figures should have the same
   size and shape.
4. The second figures should have the same
   shape but a different size.
5. b) The matching sides are different, but the
   matching angles are the same.
6. b) The matching sides and the matching
   angles are the same.

7.6 Tessellations

1. a) There are two different orientations.
   b) One orientation looks like a Z. The other
   orientation looks like a chair.
   c) To transform the Z orientation into the
   chair orientation, you need to do a 90° cw
   rotation.

7.7 Communicating about Geometric Patterns

1. a) (1) Draw a right triangle with a 2 unit base
   and a 4 unit height. The right angle should
   be at the bottom left vertex. The triangle
   should point up. (2) On the same base,
   draw a second triangle that is similar to
   the first, but has a 1 unit base and a 2 unit
   height. Make the second triangle oriented
   the same way as the first triangle. (3) Line
   up the base of the second triangle with the
   base of the first triangle. (4) Translate this
   triangle to the right until its right angle is
   2 units to the right of the bottom right
   units of the first triangle.