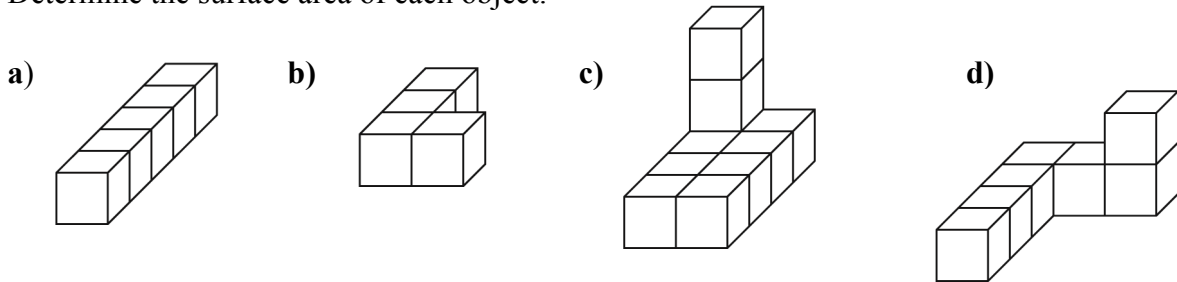Name _____ Date _____

Master 1.18    **Extra Practice 3**

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**Lesson 1.3: Surface Areas of Objects Made from Right Rectangular Prisms**

1.  Each cube has edge length 1 unit.
    Determine the surface area of each object.

    a)              b)              c)              d)

    

2.  Each edge of a linking cube is 1 unit long. Build a composite object with 7 linking cubes.
    Exchange objects with a classmate. Determine the surface area of your classmate's object.
    Check each other's work.

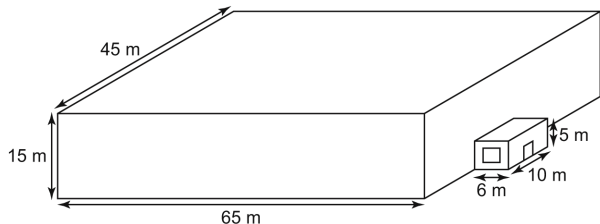3.  Determine the surface area of this composite object.
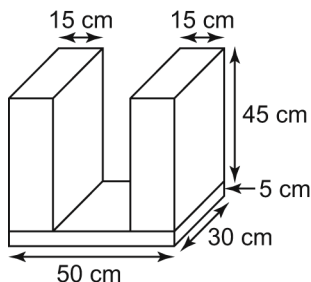
    

4.  The local curling rink is shown
    in the diagram at the right. It is to be painted.

    **a)** Determine the surface area of the structure.

    **b)** The roof, windows, and door are
    not to be painted. The door is 1 m by 2 m
    and the window is 4 m by 2 m. Determine
    the surface area to be painted.

    **c)** A can of paint covers 300 m$^2$ and
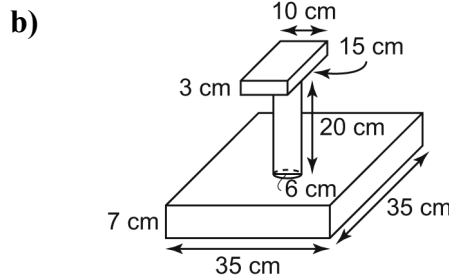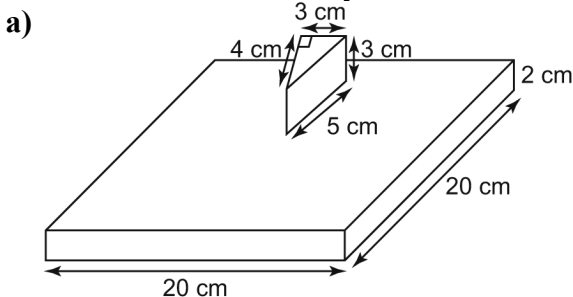    costs $45. Determine the cost of the paint needed.
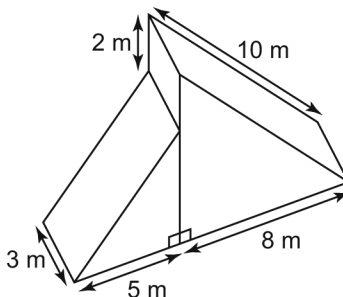
Name _____ Date _____

( Master 1.19 )  **Extra Practice 4**

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## Lesson 1.4: Surface Areas of Other Composite Objects

1. Determine the surface area of each composite object to the nearest tenth of a square centimetre where necessary.

**a)**



**b)**



2. Determine the surface area of the composite object at the right to the nearest square metre.



3. Suppose the diagram in question 2 is part of a structure at a snowboarding park.
   **a)** What changes, if any, would you make in calculating the surface area of this object?
   **b)** The structure is to be covered on the top sections (where a boarder would be riding) with a special "carpet for summer sliding." Calculate the area of carpet that would be needed.

4. Jeanne is helping her dad with his stucco business for the summer. Since Jeanne has studied surface area in school, she does some estimates for her dad's business. For the garage at the right, they plan to stucco the walls. They will not stucco the roof, car door, side door, or window. The car door measures 5 m by 2.3 m, the side door measures 2.1 m by 0.9 m, and the window measures 1 m by 0.7 m. Determine the surface area to be covered with stucco to the nearest square metre.
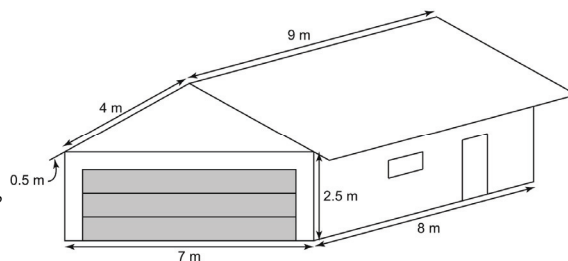
Name _____ Date _____

# Extra Practice Sample Answers

## Extra Practice 1 – Master 1.16

### Lesson 1.1

1. a) $\dfrac{1}{3}$  b) 0.4

2. a) Yes, both 25 and 121 are perfect squares.

   b) Yes, $\sqrt{2.89} = \sqrt{\dfrac{289}{100}} = \dfrac{17}{10}$

   c) Yes, $\dfrac{2}{50} = \dfrac{4}{100}$ and $\sqrt{\dfrac{4}{100}} = \dfrac{2}{10} = 0.2$

   d) No, 0.004 = $\dfrac{4}{1000}$ and 1000 is not a perfect square.

3. a) $\dfrac{25}{49}$  b) 2.56

   c) 0.8464  d) $\dfrac{100}{81}$

4. a) $\dfrac{15}{7}$  b) $\dfrac{3}{5}$

   c) $\dfrac{20}{18}$, or $\dfrac{10}{9}$

   d) $\sqrt{\dfrac{8}{98}} = \sqrt{\dfrac{4}{49}} = \dfrac{2}{7}$

5. a) 2.6  b) 18.1
   c) 0.05  d) 0.15

6. a) Side length in metres = $\sqrt{12.25} = 3.5$
      So, perimeter of garden is 4 × 3.5 m, or 14 m.
   b) New area of garden: 12.25 m$^2$ – 4.96 m$^2$
      = 7.29 m$^2$
      New side length in metres:
      $\sqrt{7.29}$ = 2.7

## Extra Practice 2 – Master 1.17

### Lesson 1.2
1. a) No, 53 is not a perfect square.
   b) Yes, both 1 and 25 are perfect squares.

   c) No, $\sqrt{0.009} = \sqrt{\dfrac{9}{1000}}$, and 1000 is not a perfect square.

d) Yes, $\sqrt{10.24} = \sqrt{\dfrac{1024}{100}}$ and both 1024 and 100 are perfect squares.

2. a) $\sqrt{25} = 5$ and $\sqrt{36} = 6$

   b) $\sqrt{0.36} = 0.6$ and $\sqrt{0.49} = 0.7$

   c) $\sqrt{\dfrac{18}{37}} \doteq \sqrt{\dfrac{16}{36}}$

   d) $\sqrt{\dfrac{14}{3}} \doteq \sqrt{4}$

3. a) $\sqrt{11.6}$ is between $\sqrt{9} = 3$ and $\sqrt{16} = 4$, but closer to 3. Try 3.4: 3.4$^2$ = 11.56. So, $\sqrt{11.6} \doteq 3.4$

   b) $\sqrt{0.39} \doteq \sqrt{0.36} = \sqrt{\dfrac{36}{100}} = \dfrac{6}{10} = 0.6$

   c) $\sqrt{\dfrac{21}{2}} = \sqrt{10.5}$ and $\sqrt{10.5}$ is between $\sqrt{9} = 3$ and $\sqrt{16} = 4$, but closer to 3. Try 3.2: 3.2$^2$ = 10.24, which is close.
      So, $\sqrt{\dfrac{21}{2}} \doteq 3.2$

   d) $\sqrt{\dfrac{11}{52}} \doteq \sqrt{\dfrac{13}{52}} = \sqrt{\dfrac{1}{4}}$, which is $\dfrac{1}{2}$.
      So, $\sqrt{\dfrac{11}{52}} \doteq 0.5$

4. I could use guess and test. I could use the benchmarks $\sqrt{49} = 7$ and $\sqrt{64} = 8$. Since 58.6 is a little closer to 64, try 7.7. 7.7$^2$ = 59.29, which is close. So, $\sqrt{58.6} \doteq 7.7$

5. a) 3.8  b) 1.4
   c) 0.3  d) 0.8

6. a) 17 cm  b) 7.1 m

## Extra Practice 3 – Master 1.18

### Lesson 1.3
1. a) 22 unit$^2$  b) 18 unit$^2$
   c) 36 unit$^2$  d) 30 unit$^2$

2. Answers will vary.

3. 11 900 cm$^2$

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**Master 1.21** **Extra Practice and Activating Prior Knowledge Sample Answers**

**4. a)** 6345 m$^2$ **b)** 3350 m$^2$
   **c)** 11.2 cans, or 12 cans of paint are
      needed. The cost of the paint is $540.

## Extra Practice 4 – Master 1.19

### Lesson 1.4
**1. a)** 996 cm$^2$ **b)** 4200.4 cm$^2$

**2.** 162 m$^2$

**3. a)** The surface area of the base, 39 m$^2$,
    would not be included. So, the surface
    area would now be 123 m$^2$.
  **b)** Only the oblique faces of the structure
    would be included; 49 m$^2$.

**4.** 74 m$^2$

## Activating Prior Knowledge
### Master 1.22a

**1. a)** 36, 49, 144
  **b)** 36 can be shown as a square with side
    length 6 units; 49 as a square with side
    length 7 units, and 144 as a square with
    side length 12 units.
**2. a)** Answers may vary; for example,
    4, 81, 121; they can each be written as
    the product of 2 equal factors.
  **b)** Answers may vary; for example,
    27, 39, 88; each number cannot be
    written as the product of 2 equal factors.

## Activating Prior Knowledge
### Master 1.22b

**1. a)** 92 cm$^2$
  **b)** 252 cm$^2$
**2.** 2035.8 cm$^2$