GRADE 7 ACCELERATED · UNIT 5 · PRACTICE TEST

Multi-Step Proportional Relationships

24 points

Name_____
Date_____
Period_____

Show your work for problems that require calculations. Each numbered question or lettered part is worth 1 point.

Scale Drawings and Scale Factors

10 points

1. A 4 cm side of a figure is 12 cm in its scale copy. Find the scale factor. *1 pt*

2. A 12 cm side of a figure is 6 cm in its scale copy. Find the scale factor. *1 pt*

3. A figure is scaled by a scale factor of 2. Select ALL of the statements that are true about the copy. *1 pt*

- ☐ A. The area is 2 times as large.
- ☐ B. Each side is 2 times as long.
- ☐ C. The perimeter is 2 times as long.
- ☐ D. The area is 4 times as large.
- ☐ E. Each angle is 2 times as large.

4. A 3 cm by 5 cm rectangle is scaled by k = 2.

a. Find the copy's perimeter. *1 pt*

b. Find the copy's area. *1 pt*

5. A figure has area 6 cm^2. Its scale copy has area 150 cm^2. What is the scale factor? *1 pt*

6. A floor plan is drawn at 1 in : 5 ft. A room is 2 in by 3 in on the plan.

a. Find the real length of the wall drawn 2 in long. *1 pt*

b. Find the room's real area. *1 pt*

7. A plan is drawn at 1 in : 3 ft. A real wall is 15 ft long. How long is it on the plan? *1 pt*

8. A plan is drawn at 1 in : 6 ft. A room is 1.5 in by 2.5 in on the plan. Find the room's real area. *1 pt*

Converting Across Systems *8 points*

9. 1 in = 2.54 cm. How many centimeters is 7 in? *1 pt*

10. 1 in = 2.54 cm and 1 cm = 0.39 in. Select ALL of the expressions that give the number of inches in 110 cm. *1 pt*

- ☐ A. 110 × 2.54
- ☐ B. 110 × 0.39
- ☐ C. 110 ÷ 0.39
- ☐ D. 110 ÷ 2.54

11. 1 yd = 3 ft, 1 ft = 12 in, 1 in = 2.54 cm. How many centimeters is 1.5 yd? *1 pt*

12. 1 kg = 2.204 lb. How many pounds is 35 kg? *1 pt*

13. 1 gal = 3.785 L. How many liters is 3 gal? *1 pt*

14. 1 in = 2.54 cm. A tile is 10 in^2 in area. Which is closest to its area in square centimeters? *1 pt*

- ○ A. 25.4 cm^2
- ○ B. 64.5 cm^2
- ○ C. 6.45 cm^2
- ○ D. 50.8 cm^2

15. Rate on Nov 5: 1 US dollar = 1.32 Canadian dollars.

a. How many Canadian dollars is $90? *1 pt*

b. How many US dollars is 66 Canadian dollars? *1 pt*

Multi-Step Proportion Problems

6 points

16. A car gets 27 miles per gallon and its tank holds 10 gal.

a. How far does it go on a full tank? *1 pt*

b. It makes a 1,200-mi trip. How many tanks of gas does the trip use? (Part of a tank counts as a whole tank.) *1 pt*

17. A recipe for 5 servings uses 2 cups of rice.

a. How much rice for 15 servings? *1 pt*

b. With 10 cups on hand, how many servings can be made? *1 pt*

18. Paint is mixed 3 : 1 : 2. A batch uses 4 gal of the second color. How many gallons is the whole batch? *1 pt*

19. 1 mi = 1.61 km. A train does 80 km/h; a bus does 45 mi/h. Which is faster? Show both speeds in one unit. *1 pt*