Name: _____ Date: _____

Unit 1 Test Review

1. Daisy got a job selling cell phones. She gets paid a commission for each phone she sells, plus a flat rate for showing up. The amount she gets paid every week can be represented by the expression 20x + 50. Answer the following questions for this scenario:

a) What is the meaning of the coefficient in this expression?

b) What does the constant represent in this situation?

2. Simplify the following expression: $\sqrt{6a^5} \cdot 5\sqrt{12b^2}$

3. Simplify the following expression: $9\sqrt{18} - 3\sqrt{50}$

4. Name the polynomial: $-3x^2 - 8x - 3$

5. Convert the following:

a. 1500dg to hg

b. 12km to cm

6. Simplify the expression $(x-4)^2$

7. What are the perimeter and area of the rectangle shown? Simplify completely.

8. A car is driving at a rate of 3 kilometers per minute. What is the car's speed in meters per hour?

1 kilometer = 1000 meters
1 hour = 60 minutes

9. A rectangle has a length of 150 centimeters and a width of 12 meters. What is the area of the rectangle in meters?

10. If a runner's speed is 20 feet per second, what is their speed in miles per hour?

1 mile = 5280 feet
1 minute = 60 seconds
1 hour = 60 minutes

Simplify the radicals:

11. $\sqrt{32z^4}$

12. $\sqrt{40a^7}$

13. $5\sqrt{6}-\sqrt{6}$

14. $\sqrt{5}+\sqrt{45}$

15. $2\sqrt{3}\left(4-\sqrt{5}\right)$

16. $3\sqrt{2}\bullet\sqrt{8}$

Simplify

17. $(5x^2-8x-6)+(7x^2-9x-3)$

18. $\left(3x^2+5x-9\right)-\left(6x^2+5x-11\right)$

Multiply

19. $7x^2(8x^4-5x^2+2)$

20. $\left(x-4\right)^2$

21. $\left(x-6\right)\left(x+7\right)$