Section 3.3 Exercises Part B

Simplify the following.

1. $(x^7x^{11})^3$

2. $(3m^2)^3(2m^2)^3$

3. $\dfrac{5f^{12}g^{-4}}{f^5g^7}$

4. $5q^{-3}m^4p^{-7}$

5. 2^{-4}

6. $3x^7(4x^2 - 5x + 3)$

7. $\left[\dfrac{15c^{-7}d^3}{35c^5d^7}\right]^{-3}$

8. $5x^5(4x^7 - 7x^6 + 5x^{-2})$

9. Why doesn't a negative exponent make the answer negative?

Using your calculator and the Savings Plan formulas, fill out the table for a savings account.

10. Annual n = 1	11. Quarterly n = 4	12. Monthly n = 12	13. Daily n = 365
P = 200	P = 200	P = 200	P = 200
r = 8%	r = 8%	r = 8%	r = 8%
Y = 15	Y = 15	Y = 15	Y = 15
A =	A =	A =	A =

Using a spreadsheet and the Future Value (FV) formula, fill out the table for a savings account. Put your results in a spreadsheet called "Savings and Loan Practice."

14. Annual n = 1	15. Quarterly n = 4	16. Monthly n = 12	17. Daily n = 365
P = 200	P = 200	P = 200	P = 200
r = 7%	r = 7%	r = 7%	r = 7%
Y = 15	Y = 15	Y = 15	Y = 15
A =	A =	A =	A =

Using your calculator, find the monthly (n = 12) payment for the following loans.

18.	19.	20.	21.
P = 300	**P** = 3000	**P** = 1500	**P** = 23,000
r = 8%	**r** = 9%	**r** = 15%	**r** = 8%
Y = 2	**Y** = 5	**Y** = 12	**Y** = 30
PMT =	**PMT** =	**PMT**=	**PMT** =

Using a spreadsheet and the Payment (PMT) formula, find the monthly (n = 12) payment for the following loans. Put your results in a spreadsheet called "Savings and Loan Practice."

22.	23.	24.	25.
P = 500	**P** = 4800	**P** = 2500	**P** = 23,000
r = 4%	**r** = 9%	**r** = 15%	**r** = 8%
Y = 2	**Y** = 5	**Y** = 12	**Y** = 20
PMT =	**PMT** =	**PMT**=	**PMT** =

26. Following the Benefit versus Bondage example in the text or video instructions (6% interest), find the overall wealth advantage of saving $279.43 for 39 months or paying off a $12,000 loan in 48 months (monthly payment of $281.82).

27. Ensure that every member of the group is able to put in the formulas and use the spreadsheet to do the calculations.

Answers:

1. x^{54}

2. $216m^{12}$

3. $\dfrac{5f^7}{g^{11}}$

4. $\dfrac{5m^4}{q^3 p^7}$

5. $\dfrac{1}{16}$

6. $12x^9 - 15x^8 + 9x^7$

7. $\dfrac{343c^{36}d^{12}}{27}$

8. $20x^{12} - 35x^{11} + 25x^3$

9. Negative exponents mean division

10. 634.43

11. 656.21

12. 661.38

13. 663.94

14. 551.81

15. 566.36

16. 569.79

17. 571.47

18. 13.57

19. 62.28

20. 22.51

21. 168.77

22. 21.71

23. 99.64

24. 37.52

25. 192.38

26. Interest gained on Savings: about $1102

   Interest paid on Loan: about $1527

   Advantage to Savings: about $2629

   > Note: Some students may not keep all of the decimals through the whole problem and may be off by a dollar or two. That's all right; that is why the answers have "about" in them.

27. Complete only when everyone understands and can enter the formulas on their own.

Exercises 3.3B