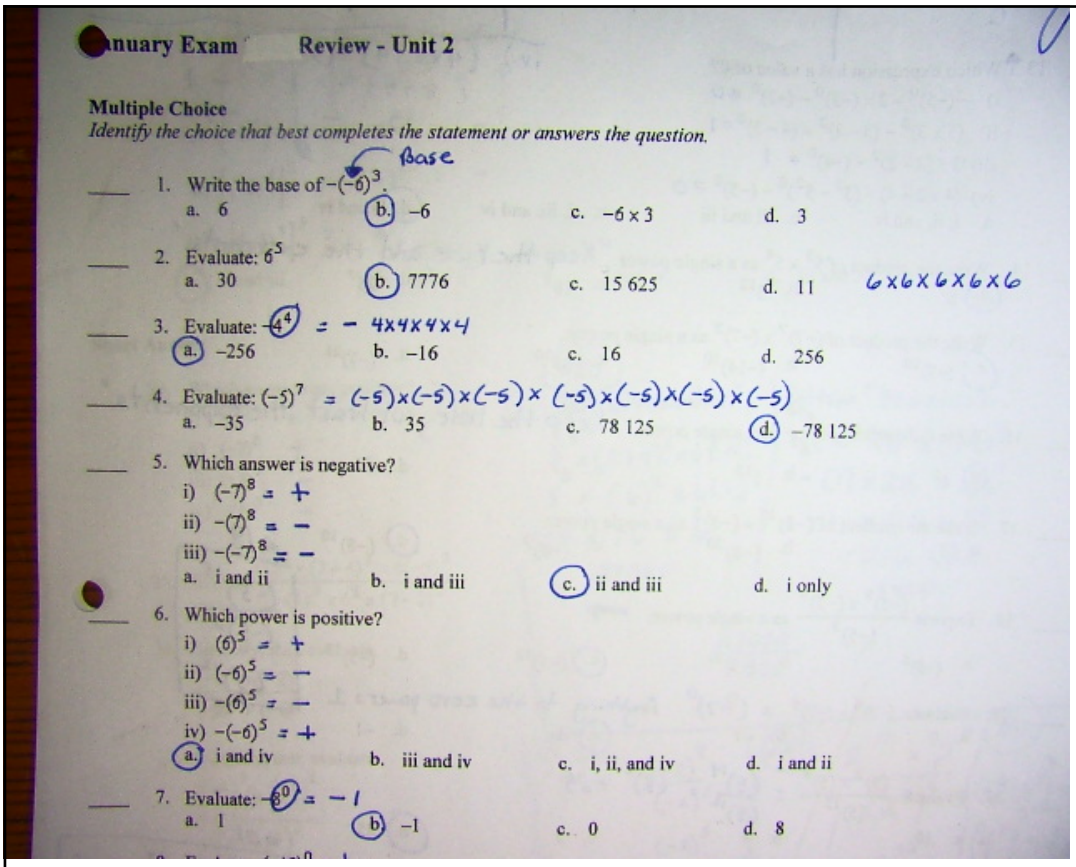


nuary Exam Review - Unit 2

Multiple Choice

Identify the choice that best completes the statement or answers the question.

Base

___ 1. Write the base of $-(-6)^3$.
a. 6 (b.) −6 c. -6×3 d. 3

___ 2. Evaluate: 6^5
a. 30 (b.) 7776 c. 15 625 d. 11 $6\times6\times6\times6\times6$

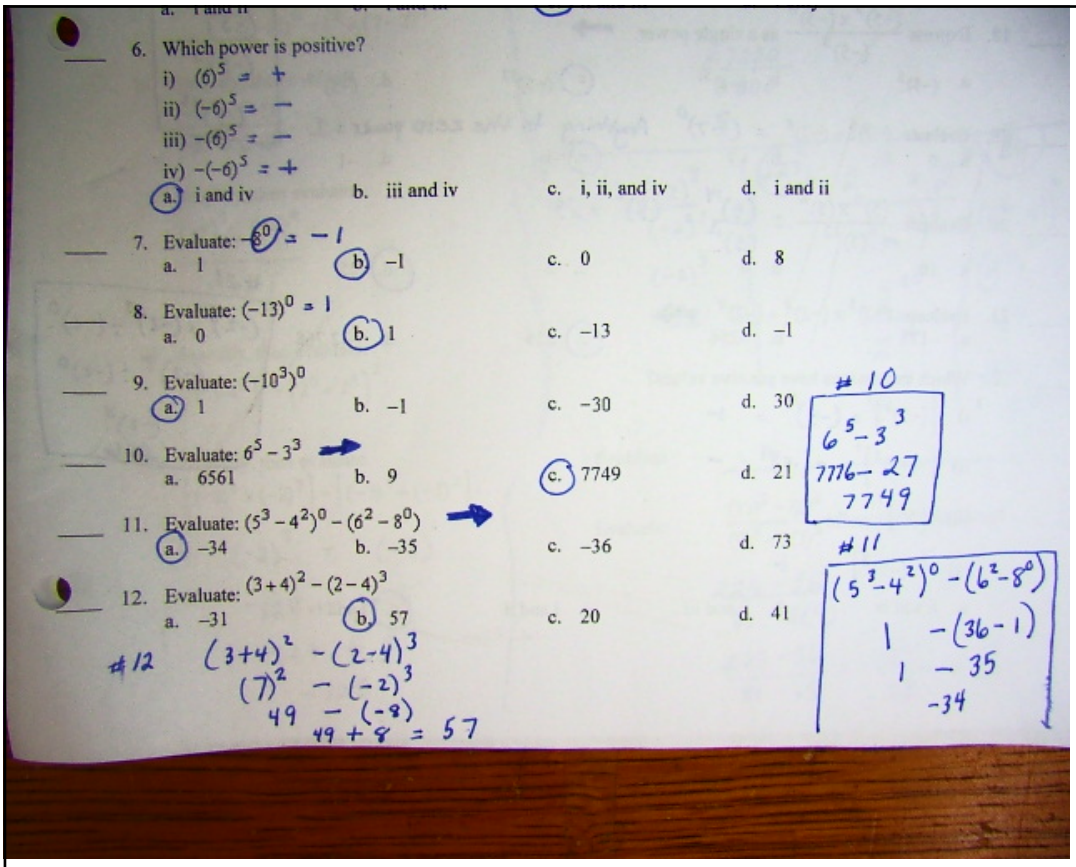
___ 3. Evaluate: $-4^4 = -4\times4\times4\times4$
(a.) −256 b. −16 c. 16 d. 256

___ 4. Evaluate: $(-5)^7 = (-5)\times(-5)\times(-5)\times(-5)\times(-5)\times(-5)\times(-5)$
a. −35 b. 35 c. 78 125 (d.) −78 125

___ 5. Which answer is negative?
i) $(-7)^8 = +$
ii) $-(7)^8 = -$
iii) $-(-7)^8 = -$
a. i and ii b. i and iii (c.) ii and iii d. i only

___ 6. Which power is positive?
i) $(6)^5 = +$
ii) $(-6)^5 = -$
iii) $-(6)^5 = -$
iv) $-(-6)^5 = +$
(a.) i and iv b. iii and iv c. i, ii, and iv d. i and ii

___ 7. Evaluate: $-8^0 = -1$
a. 1 (b) −1 c. 0 d. 8



6. Which power is positive?
   i) $(6)^5 = +$
   ii) $(-6)^5 = -$
   iii) $-(6)^5 = -$
   iv) $-(-6)^5 = +$
   a. i and iv b. iii and iv c. i, ii, and iv d. i and ii

7. Evaluate: $-8^0 = -1$
   a. 1 b. −1 c. 0 d. 8

8. Evaluate: $(-13)^0 = 1$
   a. 0 b. 1 c. −13 d. −1

9. Evaluate: $(-10^3)^0$
   a. 1 b. −1 c. −30 d. 30

10. Evaluate: $6^5 - 3^3$
    a. 6561 b. 9 c. 7749 d. 21

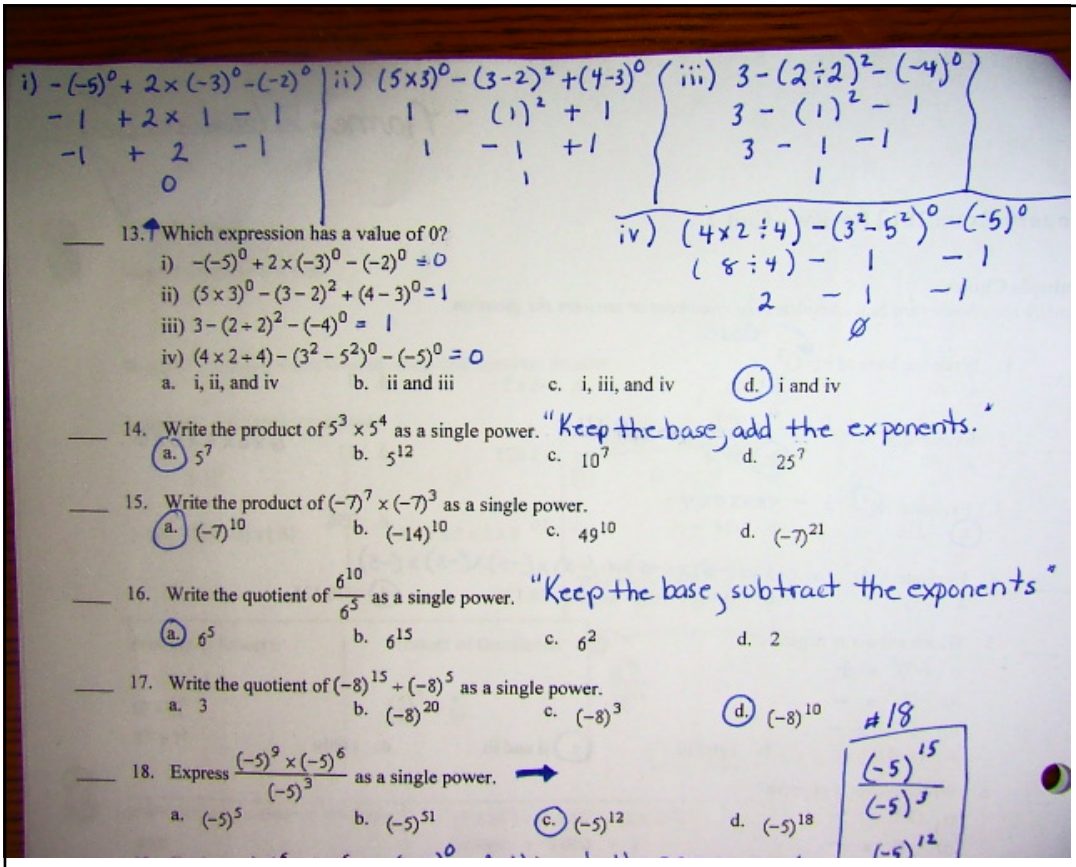
11. Evaluate: $(5^3 - 4^2)^0 - (6^2 - 8^0)$
    a. −34 b. −35 c. −36 d. 73

12. Evaluate: $(3+4)^2 - (2-4)^3$
    a. −31 b. 57 c. 20 d. 41

#12 $(3+4)^2 - (2-4)^3$
$(7)^2 - (-2)^3$
$49 - (-8)$
$49 + 8 = 57$

#10
$6^5 - 3^3$
$7776 - 27$
7749

#11
$(5^3 - 4^2)^0 - (6^2 - 8^0)$
$1 - (36 - 1)$
$1 - 35$
-34



i) $-(-5)^0 + 2\times(-3)^0 - (-2)^0$
$-1 + 2\times 1 - 1$
$-1 + 2 - 1$
0

ii) $(5\times3)^0 - (3-2)^2 + (4-3)^0$
$1 - (1)^2 + 1$
$1 - 1 + 1$
1

iii) $3 - (2\div2)^2 - (-4)^0$
$3 - (1)^2 - 1$
$3 - 1 - 1$
1

iv) $(4\times2\div4) - (3^2-5^2)^0 - (-5)^0$
$(8\div4) - 1 - 1$
$2 - 1 - 1$
$\varnothing$

13. Which expression has a value of 0?
i) $-(-5)^0 + 2\times(-3)^0 - (-2)^0 = 0$
ii) $(5\times3)^0 - (3-2)^2 + (4-3)^0 = 1$
iii) $3 - (2\div2)^2 - (-4)^0 = 1$
iv) $(4\times2\div4) - (3^2-5^2)^0 - (-5)^0 = 0$
a. i, ii, and iv b. ii and iii c. i, iii, and iv (d.) i and iv

14. Write the product of $5^3 \times 5^4$ as a single power. "Keep the base, add the exponents."
(a.) 5^7 b. 5^{12} c. 10^7 d. 25^7

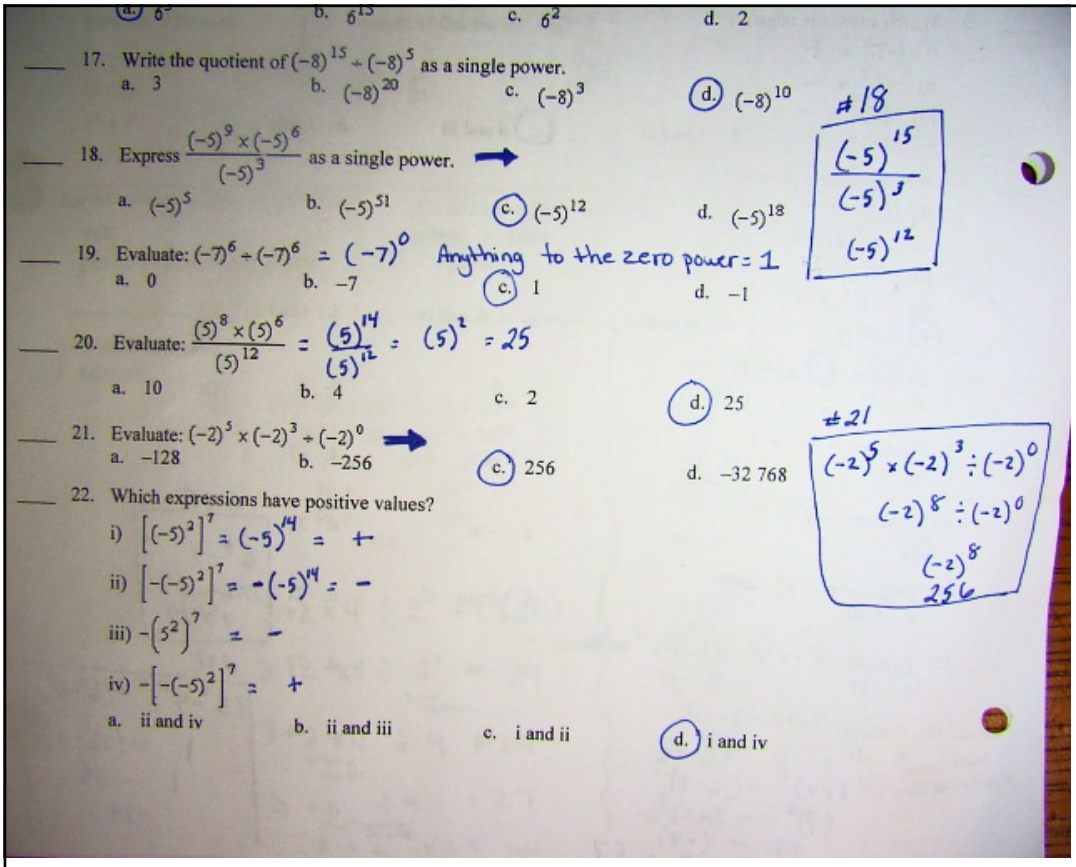
15. Write the product of $(-7)^7 \times (-7)^3$ as a single power.
(a.) $(-7)^{10}$ b. $(-14)^{10}$ c. 49^{10} d. $(-7)^{21}$

16. Write the quotient of $\frac{6^{10}}{6^5}$ as a single power. "Keep the base, subtract the exponents"
(a.) 6^5 b. 6^{15} c. 6^2 d. 2

17. Write the quotient of $(-8)^{15} \div (-8)^5$ as a single power.
a. 3 b. $(-8)^{20}$ c. $(-8)^3$ (d.) $(-8)^{10}$

18. Express $\frac{(-5)^9 \times (-5)^6}{(-5)^3}$ as a single power.
a. $(-5)^5$ b. $(-5)^{51}$ (c.) $(-5)^{12}$ d. $(-5)^{18}$

#18
$\frac{(-5)^{15}}{(-5)^3}$
$(-5)^{12}$



a. 6^{-2} b. 6^{15} c. 6^{2} d. 2

___ 17. Write the quotient of $(-8)^{15} \div (-8)^{5}$ as a single power.
a. 3 b. $(-8)^{20}$ c. $(-8)^{3}$ (d.) $(-8)^{10}$

#18
$\frac{(-5)^{15}}{(-5)^{3}}$
$(-5)^{12}$

___ 18. Express $\frac{(-5)^{9} \times (-5)^{6}}{(-5)^{3}}$ as a single power. ➡
a. $(-5)^{5}$ b. $(-5)^{51}$ (c.) $(-5)^{12}$ d. $(-5)^{18}$

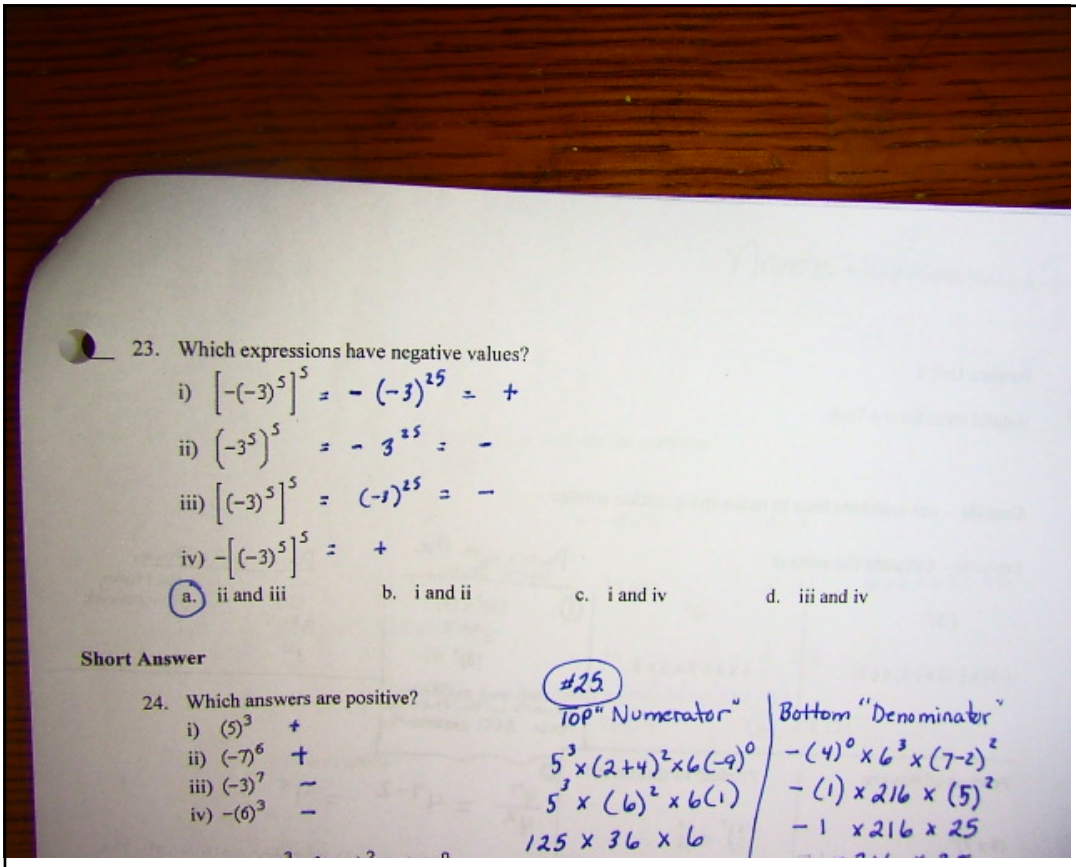
___ 19. Evaluate: $(-7)^{6} \div (-7)^{6} = (-7)^{0}$ Anything to the zero power = 1
a. 0 b. –7 (c.) 1 d. –1

___ 20. Evaluate: $\frac{(5)^{8} \times (5)^{6}}{(5)^{12}} = \frac{(5)^{14}}{(5)^{12}} = (5)^{2} = 25$
a. 10 b. 4 c. 2 (d.) 25

#21
$(-2)^{5} \times (-2)^{3} \div (-2)^{0}$
$(-2)^{8} \div (-2)^{0}$
$(-2)^{8}$
256

___ 21. Evaluate: $(-2)^{5} \times (-2)^{3} \div (-2)^{0}$ ➡
a. –128 b. –256 (c.) 256 d. –32 768

___ 22. Which expressions have positive values?
i) $\left[(-5)^{2}\right]^{7} = (-5)^{14} = +$
ii) $\left[-(-5)^{2}\right]^{7} = -(-5)^{14} = -$
iii) $-\left(5^{2}\right)^{7} = -$
iv) $-\left[-(-5)^{2}\right]^{7} = +$
a. ii and iv b. ii and iii c. i and ii (d.) i and iv



23. Which expressions have negative values?

i) $\left[-(-3)^5\right]^5 = -(-3)^{25} = +$

ii) $\left(-3^5\right)^5 = -3^{25} = -$

iii) $\left[(-3)^5\right]^5 = (-3)^{25} = -$

iv) $-\left[(-3)^5\right]^5 = +$

a. ii and iii b. i and ii c. i and iv d. iii and iv

Short Answer

24. Which answers are positive?

i) $(5)^3$ +

ii) $(-7)^6$ +

iii) $(-3)^7$ −

iv) $-(6)^3$ −

#25

Top "Numerator"

$5^3 \times (2+4)^2 \times 6(-9)^0$

$5^3 \times (6)^2 \times 6(1)$

$125 \times 36 \times 6$

Bottom "Denominator"

$-(4)^0 \times 6^3 \times (7-2)^2$

$-(1) \times 216 \times (5)^2$

$-1 \times 216 \times 25$

iv) $-\left[(-3)^5\right]^5$ = +

a. ii and iii b. i and ii c. i and iv d. iii and iv

Short Answer

24. Which answers are positive?
i) $(5)^3$ +
ii) $(-7)^6$ +
iii) $(-3)^7$ −
iv) $-(6)^3$ −

25. Evaluate: $\dfrac{5^3 \times (2+4)^2 \times 6(-9)^0}{-(4)^0 \times 6^3 \times (7-2)^2}$

26. Simplify, then evaluate.
$\dfrac{(-2)^6 \times (-2)^2}{(-2)^3 \times (-2)^0}$

27. Simplify, then evaluate.
$\dfrac{\left(2^4\right)^3 \times \left(2^2\right)^4}{\left(2^4 \times 2^4\right)^2}$

28. Simplify, then evaluate.
$\left(4^6 \div 4^3\right)^2 - \left(2^8 \div 2^6\right)^2$

29. Simplify, then evaluate

#25
"Top" Numerator
$5^3 \times (2+4)^2 \times 6(-9)^0$
$5^3 \times (6)^2 \times 6(1)$
$125 \times 36 \times 6$
27000

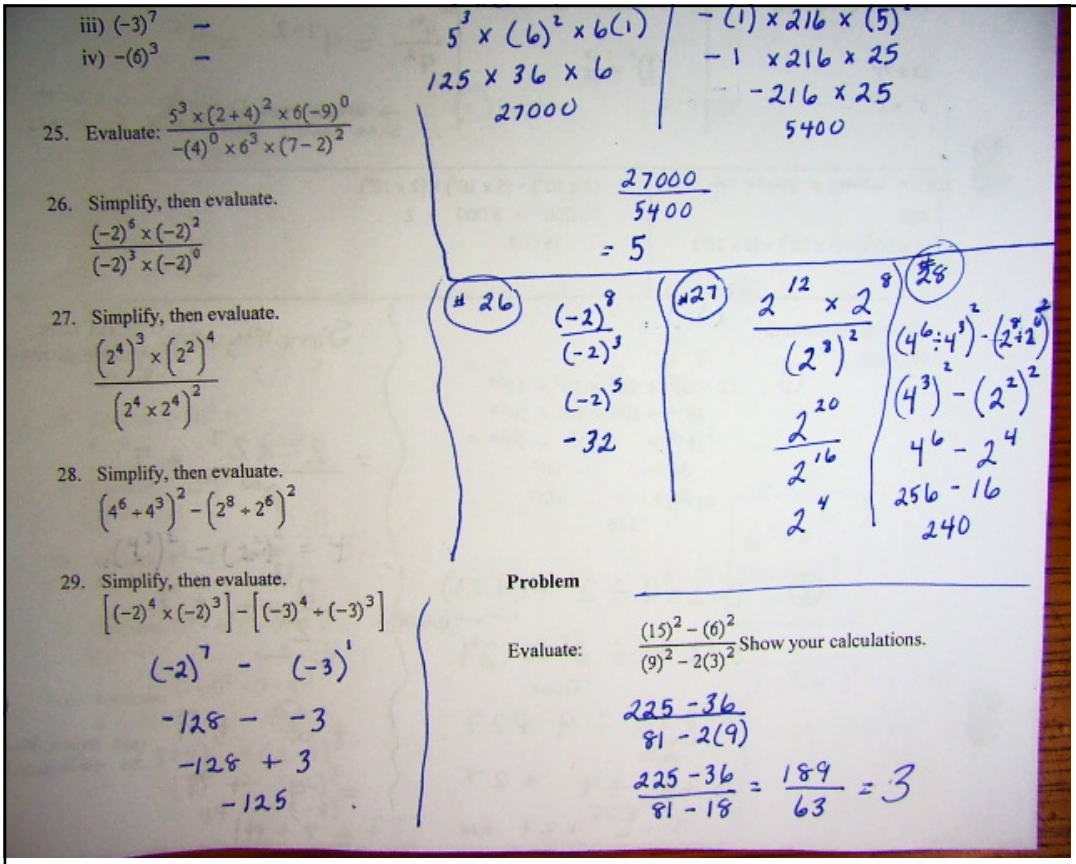
Bottom "Denominator"
$-(4)^0 \times 6^3 \times (7-2)^2$
$-(1) \times 216 \times (5)^2$
$-1 \times 216 \times 25$
-216×25
5400

$\frac{27000}{5400}$
$= 5$

#26
$\frac{(-2)^8}{(-2)^3}$
$(-2)^5$
-32

#27
$\frac{2^{12} \times 2^8}{(2^3)^2}$
$\frac{2^{20}}{2^6}$
2^4

#28
$(4^6 \div 4^3)^2 - (2^8 \div 2^6)^2$
$(4^3)^2 - (2^2)^2$
$4^6 - 2^4$
$256 - 16$
240



iii) $(-3)^7$ –

iv) $-(6)^3$ –

25. Evaluate: $\dfrac{5^3 \times (2+4)^2 \times 6(-9)^0}{-(4)^0 \times 6^3 \times (7-2)^2}$

$5^3 \times (6)^2 \times 6(1)$

$125 \times 36 \times 6$

27000

$-(1) \times 216 \times (5)^2$

$-1 \times 216 \times 25$

-216×25

5400

$\dfrac{27000}{5400}$

$= 5$

26. Simplify, then evaluate.

$\dfrac{(-2)^6 \times (-2)^2}{(-2)^3 \times (-2)^0}$

#26

$\dfrac{(-2)^8}{(-2)^3}$

$(-2)^5$

-32

27. Simplify, then evaluate.

$\dfrac{\left(2^4\right)^3 \times \left(2^2\right)^4}{\left(2^4 \times 2^4\right)^2}$

#27

$\dfrac{2^{12} \times 2^8}{(2^8)^2}$

$\dfrac{2^{20}}{2^{16}}$

2^4

28. Simplify, then evaluate.

$\left(4^6 \div 4^3\right)^2 - \left(2^8 \div 2^6\right)^2$

#28

$(4^6 \div 4^3)^2 - (2^8 \div 2^6)^2$

$(4^3)^2 - (2^2)^2$

$4^6 - 2^4$

$256 - 16$

240

29. Simplify, then evaluate.

$\left[(-2)^4 \times (-2)^3\right] - \left[(-3)^4 \div (-3)^3\right]$

$(-2)^7 - (-3)^1$

$-128 - -3$

$-128 + 3$

-125

Problem

Evaluate: $\dfrac{(15)^2 - (6)^2}{(9)^2 - 2(3)^2}$ Show your calculations.

$\dfrac{225 - 36}{81 - 2(9)}$

$\dfrac{225 - 36}{81 - 18} = \dfrac{189}{63} = 3$