Calculus & Trigonometry Name_____ ID: 1

Assignment

Date_____ Period____

Solve each equation.

1) $4^{a} = 2^{6}$

2) $3^{n+3} = 3^{-2n-1}$

3) $25^{3m+1} = 125^{2m+2}$

4) $2^{-3n} = 2^{-3n}$

5) $8^{3n-2} = 16^{-2n}$

6) $5^{2-3x} = 125$

7) $5^{3x} = 5^{x-3}$

8) $4^{-3b} = \frac{1}{64}$

9) $625^{-2b} = \left(\frac{1}{5}\right)^{-b+1}$

10) $625^{-n-2} = 25^{3n}$

11) $16^{-3k} = 64^{-2k}$

12) $64^{2-3n} = \frac{1}{16}$

13) $27^{-2x} = 9^{3x+3}$

14) $216^{3b} = 36^{-b-2}$

15) $4^{n-1} = 16$

16) $2^{-n} = 4$

17) $625^{3v+2} = 25$

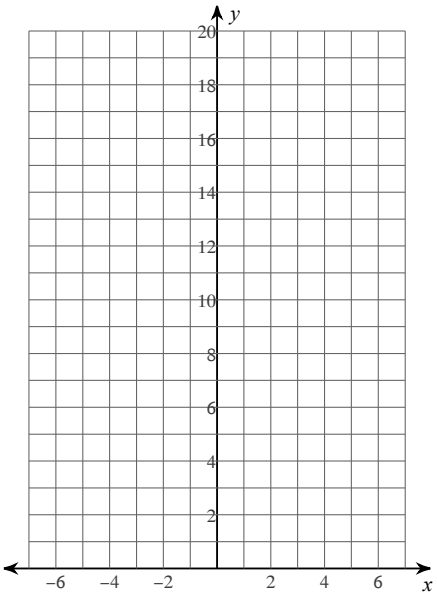
18) $5^{-n} = 25$

19) $64^{3k-2} = 16^{-3k}$

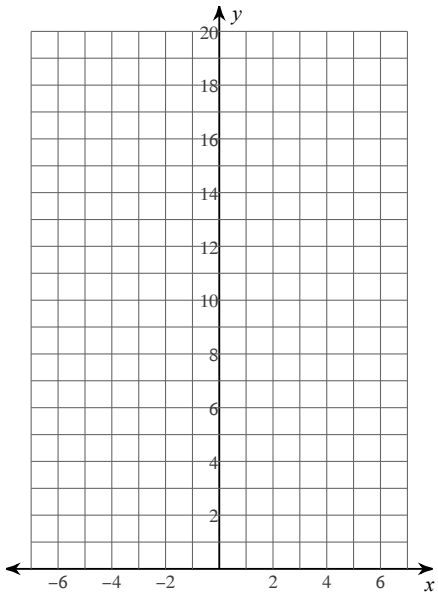
20) $36^{k-3} = 216^{3k}$

Sketch the graph of each function.

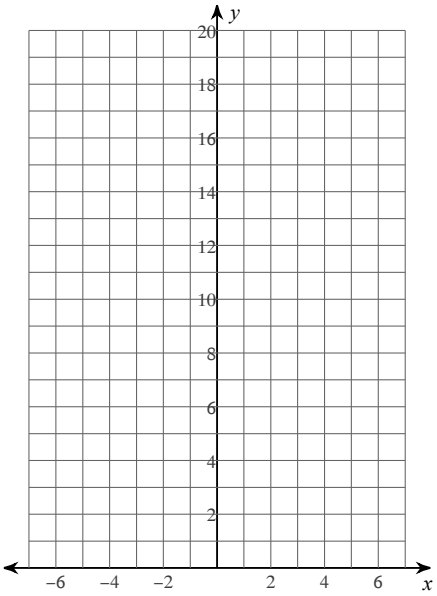
21) $y = \frac{1}{4} \cdot \left(\frac{1}{6}\right)^x$



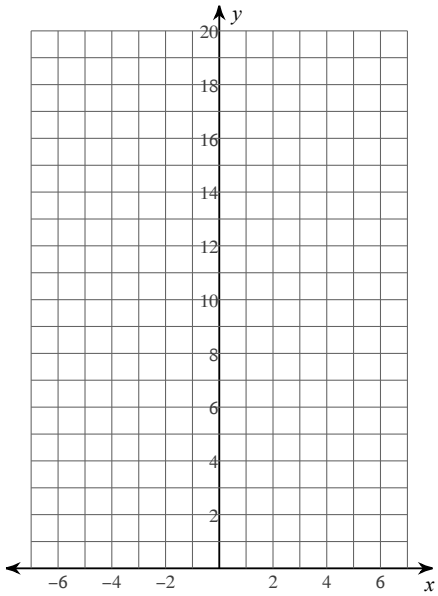
22) $y = 5 \cdot 2^x$



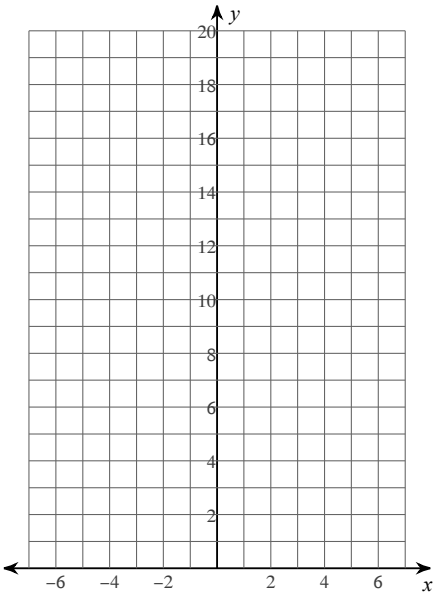
23) $y = 5 \cdot \left(\frac{1}{2}\right)^x$



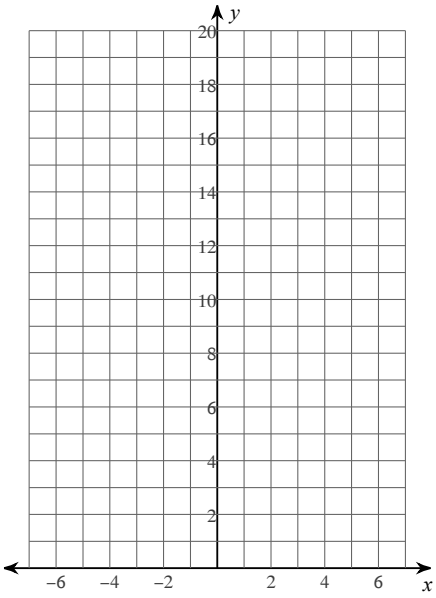
24) $y = 3 \cdot 2^x$



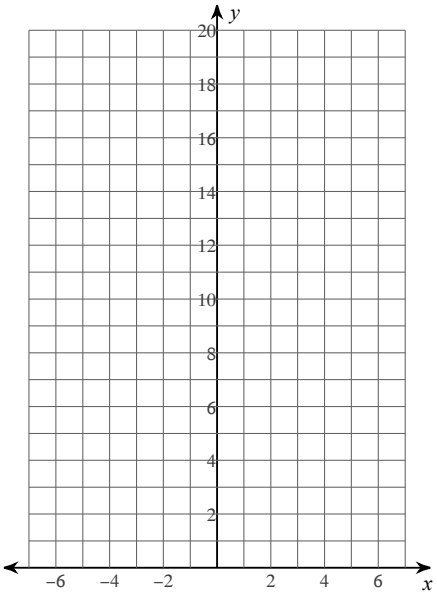
25) $y = \frac{1}{4} \cdot \left(\frac{1}{8}\right)^x$



26) $y = \frac{1}{2} \cdot 2^x$



27) $y = 2 \cdot \left(\frac{1}{3}\right)^x$



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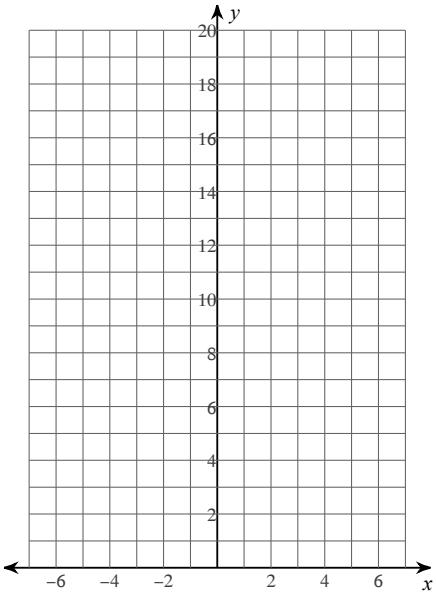

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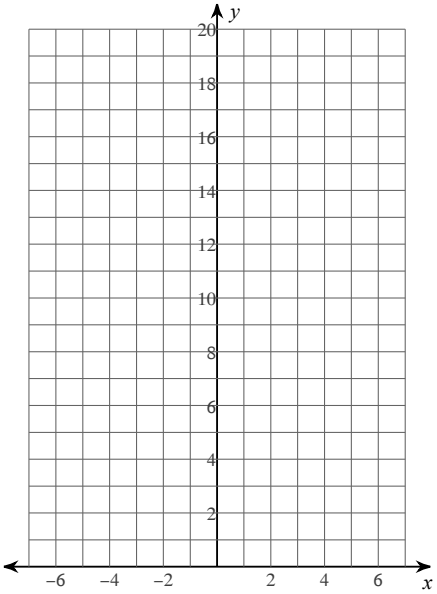
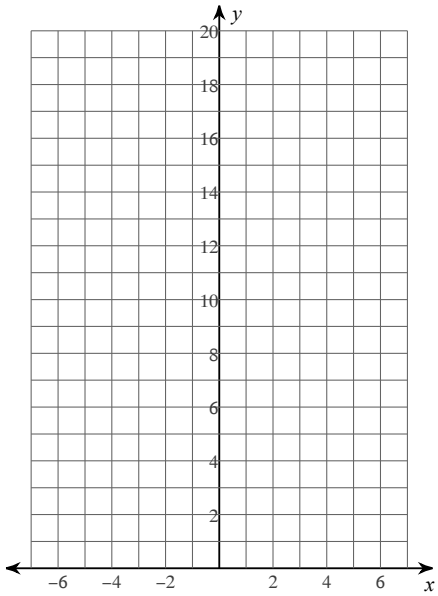
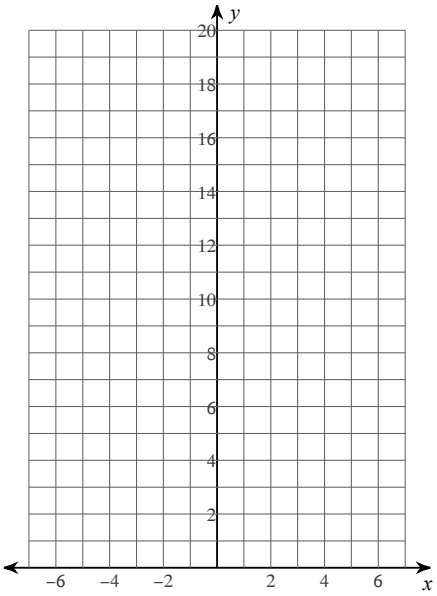


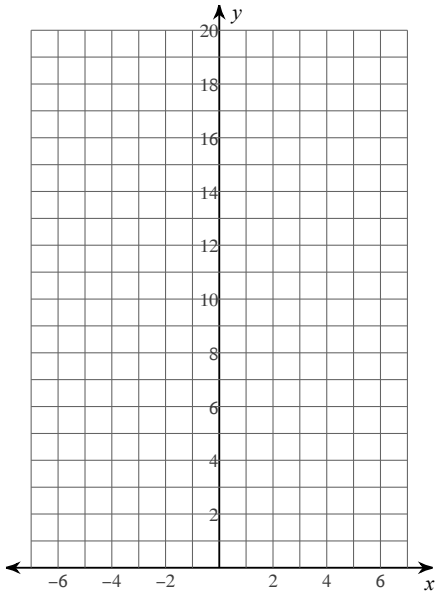
30) $y = \frac{1}{4} \cdot \left(\frac{1}{2}\right)^x$



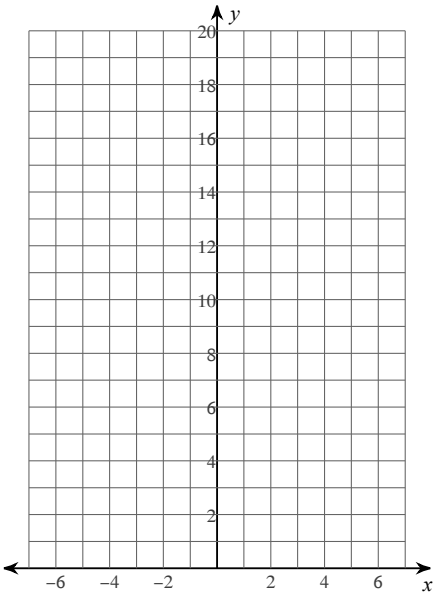
31) $y = 3 \cdot \left(\frac{1}{2}\right)^x$



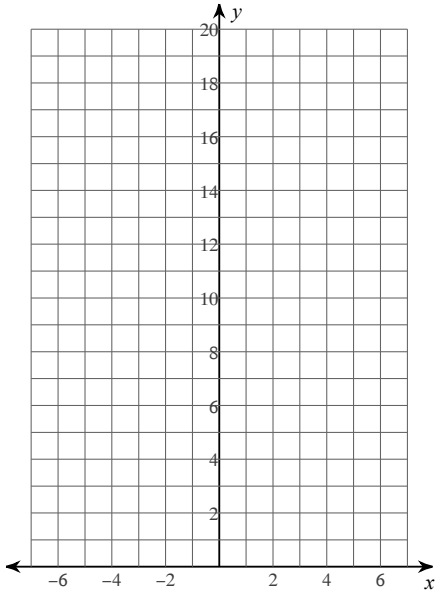
32) $y = \frac{1}{2} \cdot \left(\frac{1}{2}\right)^x$



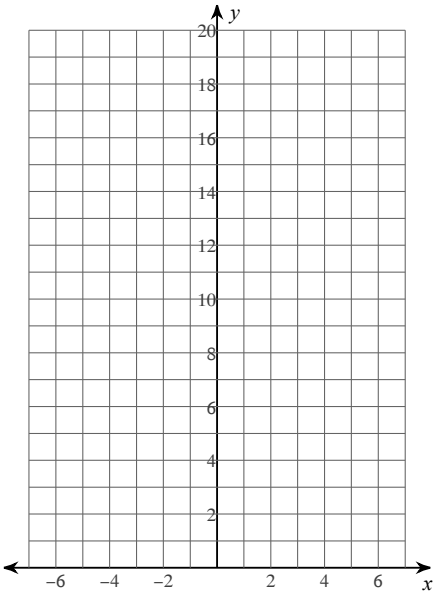
33) $y = 4 \cdot \left(\frac{1}{2}\right)^x$



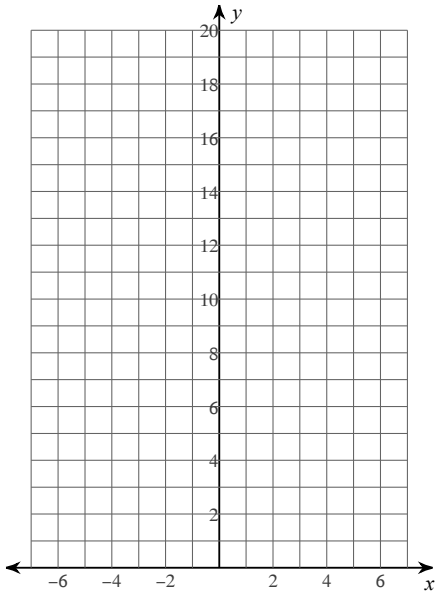
34) $y = 2 \cdot 2^x$



35) $y = \frac{1}{4} \cdot \left(\frac{1}{7}\right)^x$



36) $y = \frac{1}{3} \cdot \left(\frac{1}{7}\right)^x$



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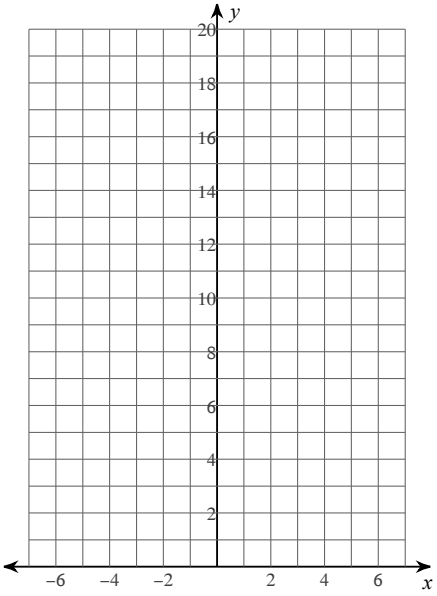
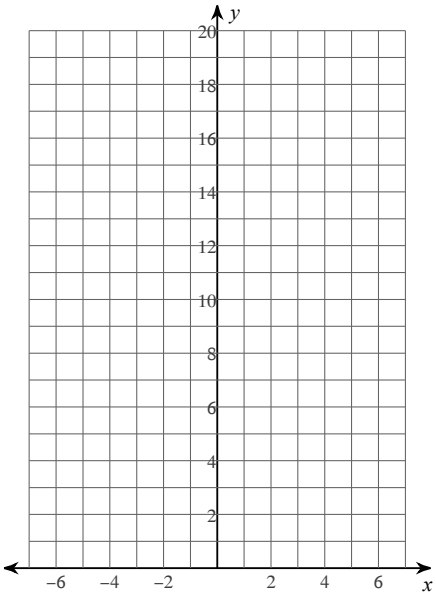
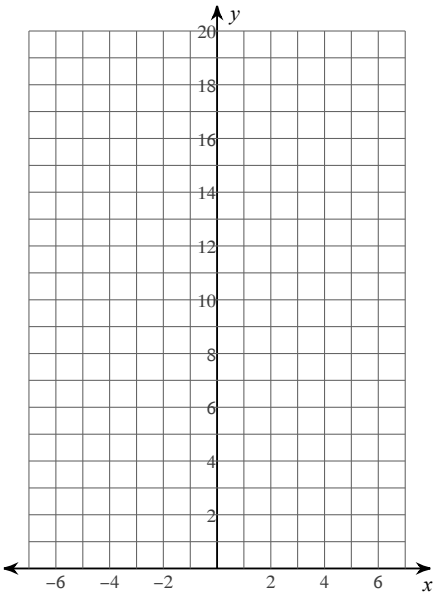


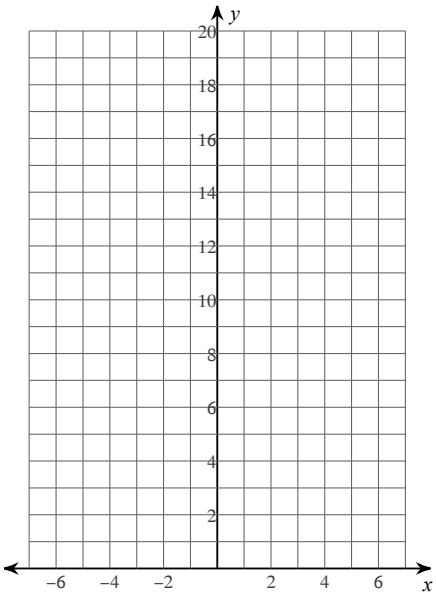
38) $y = \frac{1}{4} \cdot 5^x$



39) $y = \frac{1}{3} \cdot 2^x$



40) $y = \frac{1}{4} \cdot 4^x$



41) Trevon invests $3,485 in a savings account with a fixed annual interest rate of 8% compounded continuously. What will the account balance be after 6 years?

42) Kristin invests $5,123 in a savings account with a fixed annual interest rate of 9% compounded continuously. What will the account balance be after 6 years?

43) Ming invests $8,615 in a savings account with a fixed annual interest rate of 2% compounded continuously. What will the account balance be after 11 years?

44) Shanice invests $8,369 in a retirement account with a fixed annual interest rate of 5% compounded continuously. What will the account balance be after 18 years?

45) Mike invests $4,938 in a savings account with a fixed annual interest rate of 4% compounded continuously. What will the account balance be after 10 years?

46) Matt invests $1,426 in a retirement account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 20 years?

47) Perry invests $4,314 in a retirement account with a fixed annual interest rate of 7% compounded continuously. What will the account balance be after 14 years?

48) Ndiba invests $5,851 in a retirement account with a fixed annual interest rate of 7% compounded continuously. What will the account balance be after 17 years?

49) Julio invests $4,967 in a savings account with a fixed annual interest rate of 9% compounded continuously. What will the account balance be after 8 years?

50) Stephanie invests $5,076 in a retirement account with a fixed annual interest rate of 5% compounded continuously. What will the account balance be after 19 years?

51) Pranav invests $4,590 in a savings account with a fixed annual interest rate of 8% compounded continuously. What will the account balance be after 8 years?

52) Jose invests $7,760 in a retirement account with a fixed annual interest rate of 3% compounded continuously. What will the account balance be after 17 years?

53) Darryl invests $7,701 in a retirement account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 15 years?

54) Jimmy invests $3,011 in a retirement account with a fixed annual interest rate of 8% compounded continuously. What will the account balance be after 14 years?

55) Emily invests $3,782 in a retirement account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 16 years?

56) Eduardo invests $8,892 in a savings account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 9 years?

57) Ndiba invests $6,390 in a savings account with a fixed annual interest rate of 7% compounded continuously. What will the account balance be after 10 years?

58) Emily invests $4,162 in a savings account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 7 years?

59) Julio invests $1,319 in a retirement account with a fixed annual interest rate of 7% compounded continuously. What will the account balance be after 13 years?

60) Sumalee invests $6,237 in a savings account with a fixed annual interest rate of 8% compounded continuously. What will the account balance be after 4 years?

Rewrite each equation in exponential form.

61) $\log_{17} 289 = 2$

62) $\log_{11} 121 = 2$

63) $\log_{\frac{1}{15}} \frac{1}{225} = 2$

64) $\log_{361} 19 = \frac{1}{2}$

65) $\log_8 64 = 2$

66) $\log_9 3 = \frac{1}{2}$

67) $\log_4 16 = 2$

68) $\log_{13} \frac{1}{169} = -2$

69) $\log_{289} 17 = \frac{1}{2}$

70) $\log_{15} 225 = 2$

71) $\log_{18} 324 = 2$

72) $\log_9 81 = 2$

73) $\log_{\frac{1}{5}} \frac{1}{25} = 2$

74) $\log_{15} \frac{1}{225} = -2$

75) $\log_{12} 144 = 2$

76) $\log_5 125 = 3$

77) $\log_{13} 1 = 0$

78) $\log_{\frac{1}{5}} \frac{1}{625} = 4$

79) $\log_{125} 25 = \frac{2}{3}$

80) $\log_8 8 = 1$

Rewrite each equation in logarithmic form.

81) $20^2 = 400$

82) $\left(\frac{1}{18}\right)^2 = \frac{1}{324}$

83) $5^3 = 125$

84) $16^{\frac{1}{2}} = 4$

85) $12^1 = 12$

86) $9^{\frac{1}{2}} = 3$

87) $18^2 = 324$

88) $2^3 = 8$

89) $\left(\frac{1}{12}\right)^2 = \frac{1}{144}$

90) $15^2 = 225$

91) $289^{\frac{1}{2}} = 17$

92) $15^1 = 15$

93) $13^0 = 1$

94) $14^2 = 196$

95) $3^3 = 27$

96) $9^2 = 81$

97) $19^2 = 361$

98) $2^4 = 16$

99) $13^2 = 169$

100) $8^2 = 64$

Calculus & Trigonometry Name_____ ID: 1

Assignment

Date_____ Period____

Solve each equation.

1) $4^{a} = 2^{6}$

$\{3\}$

2) $3^{n+3} = 3^{-2n-1}$ $\left\{-\frac{4}{3}\right\}$

3) $25^{3m+1} = 125^{2m+2}$

No solution.

4) $2^{-3n} = 2^{-3n}$

{ All real numbers. }

5) $8^{3n-2} = 16^{-2n}$ $\left\{\frac{6}{17}\right\}$

6) $5^{2-3x} = 125$ $\left\{-\frac{1}{3}\right\}$

7) $5^{3x} = 5^{x-3}$ $\left\{-\frac{3}{2}\right\}$

8) $4^{-3b} = \frac{1}{64}$

$\{1\}$

9) $625^{-2b} = \left(\frac{1}{5}\right)^{-b+1}$ $\left\{\frac{1}{9}\right\}$

10) $625^{-n-2} = 25^{3n}$ $\left\{-\frac{4}{5}\right\}$

11) $16^{-3k} = 64^{-2k}$

{ All real numbers. }

12) $64^{2-3n} = \frac{1}{16}$ $\left\{\frac{8}{9}\right\}$

13) $27^{-2x} = 9^{3x+3}$ $\left\{-\frac{1}{2}\right\}$

14) $216^{3b} = 36^{-b-2}$ $\left\{-\frac{4}{11}\right\}$

15) $4^{n-1} = 16$

$\{3\}$

16) $2^{-n} = 4$

$\{-2\}$

17) $625^{3v+2} = 25$ $\left\{-\frac{1}{2}\right\}$

18) $5^{-n} = 25$

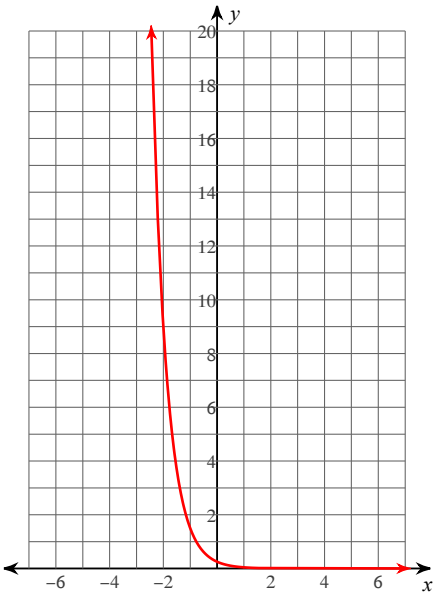
$\{-2\}$

19) $64^{3k-2} = 16^{-3k}$ $\left\{\frac{2}{5}\right\}$

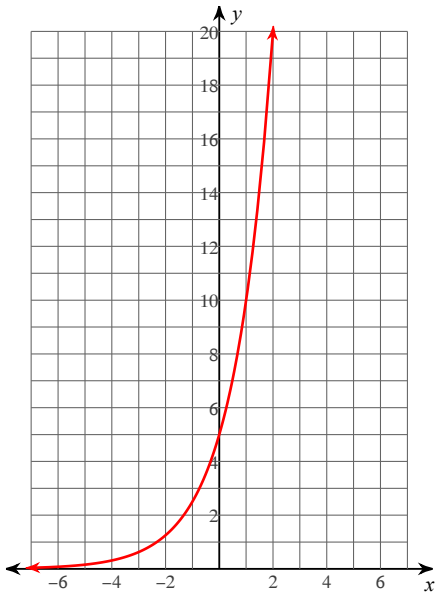
20) $36^{k-3} = 216^{3k}$ $\left\{-\frac{6}{7}\right\}$

Sketch the graph of each function.

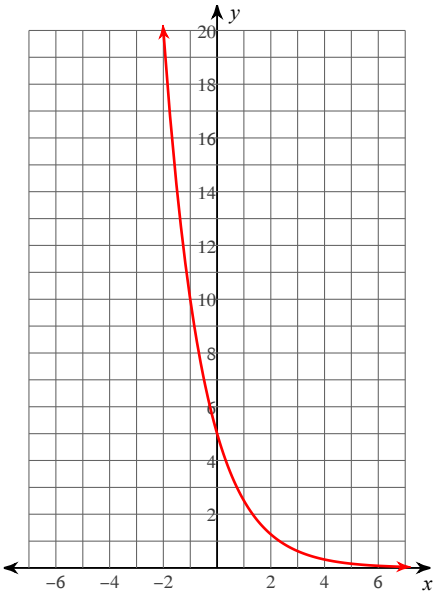
21) $y = \frac{1}{4} \cdot \left(\frac{1}{6}\right)^x$



22) $y = 5 \cdot 2^x$



23) $y = 5 \cdot \left(\frac{1}{2}\right)^x$



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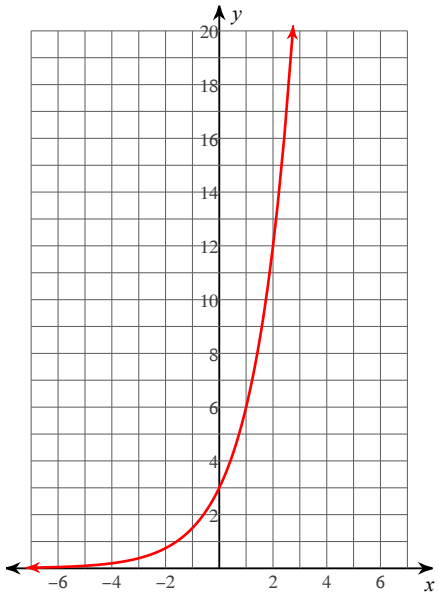
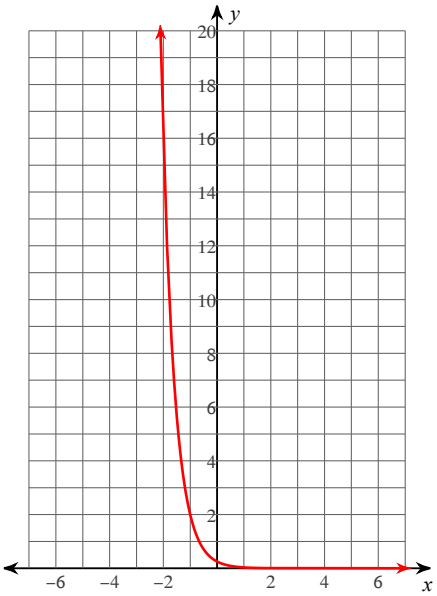


25) $y = \frac{1}{4} \cdot \left(\frac{1}{8}\right)^x$



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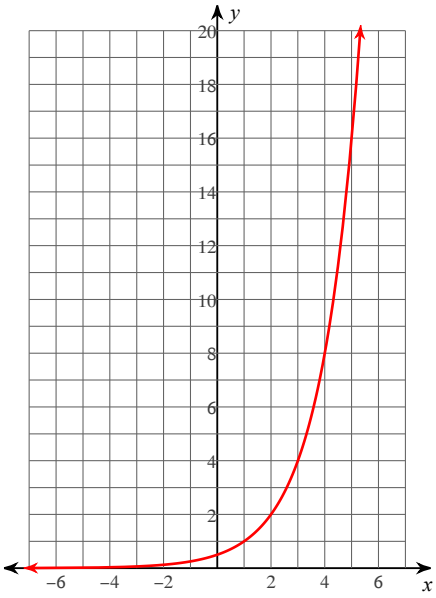
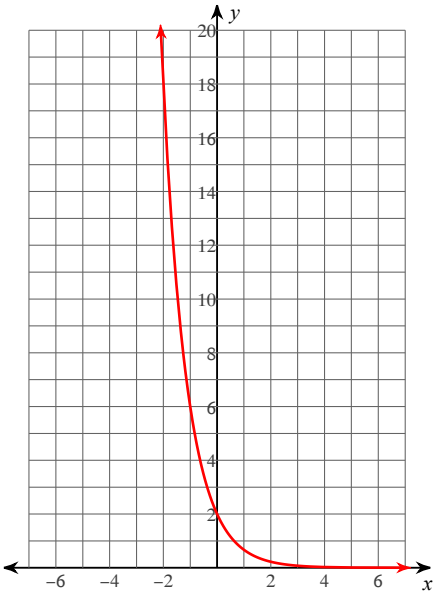


27) $y = 2 \cdot \left(\frac{1}{3}\right)^x$



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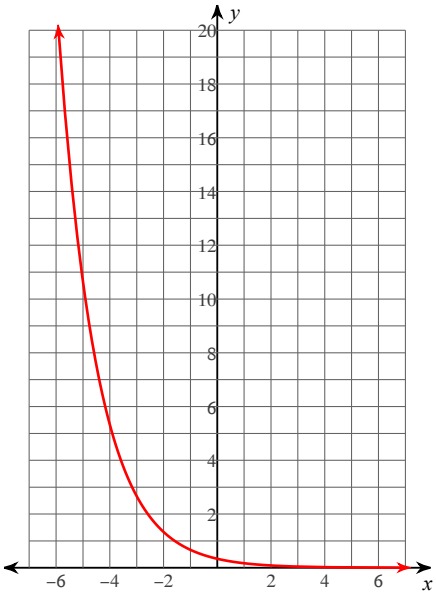

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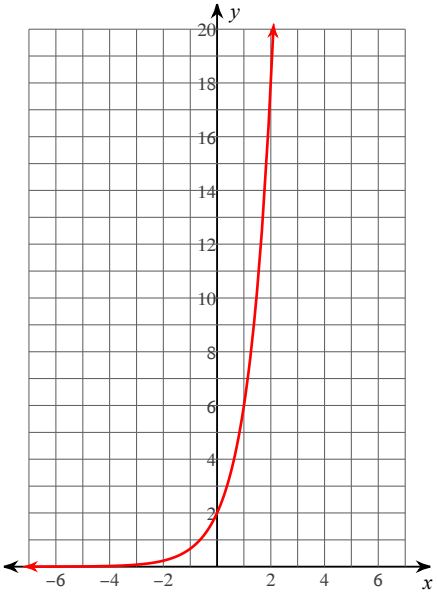

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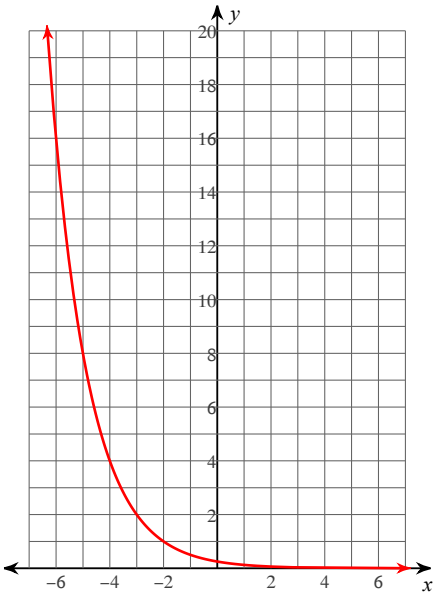

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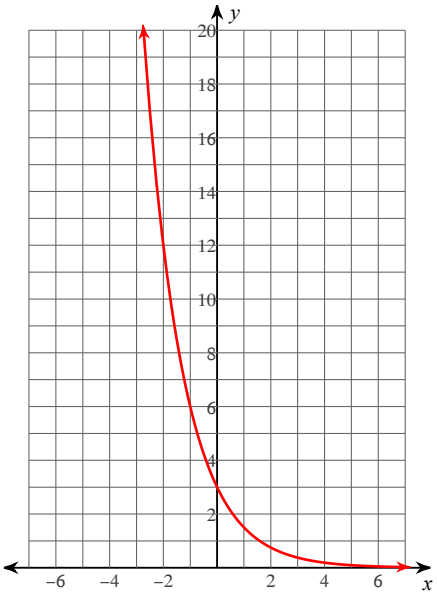

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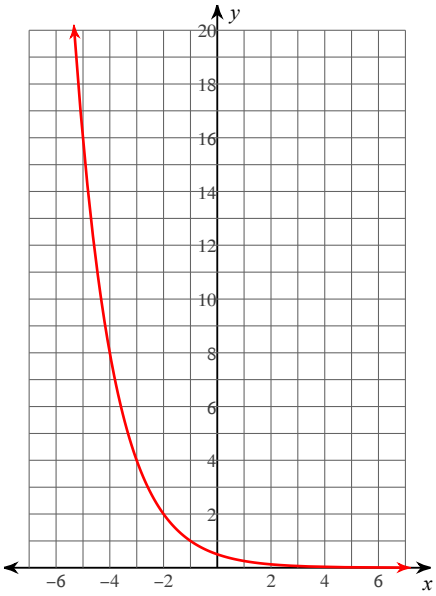
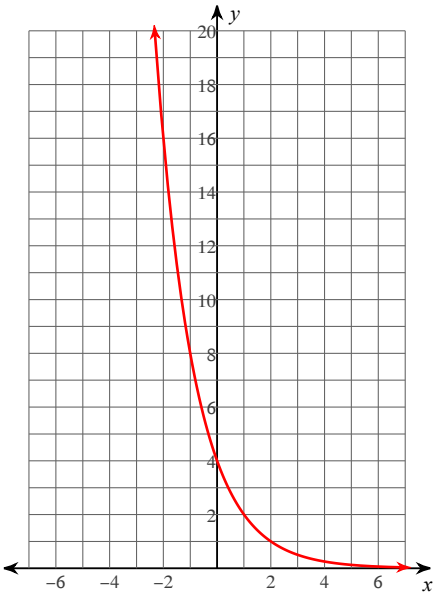


33) $y = 4 \cdot \left(\frac{1}{2}\right)^x$



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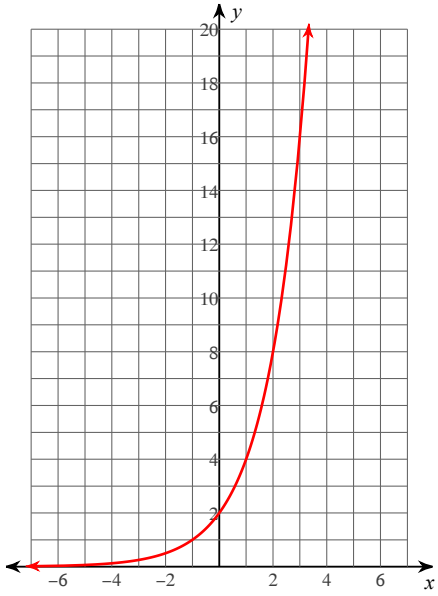

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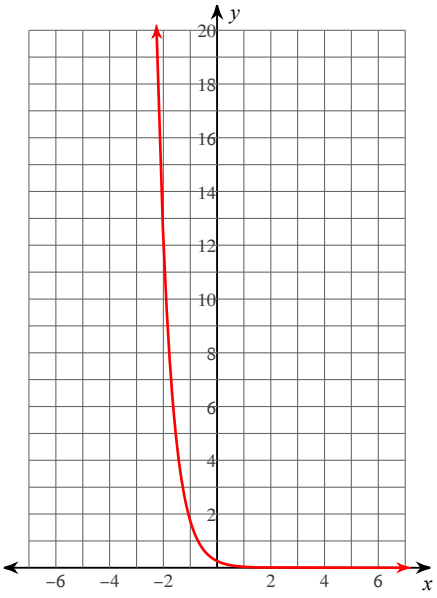
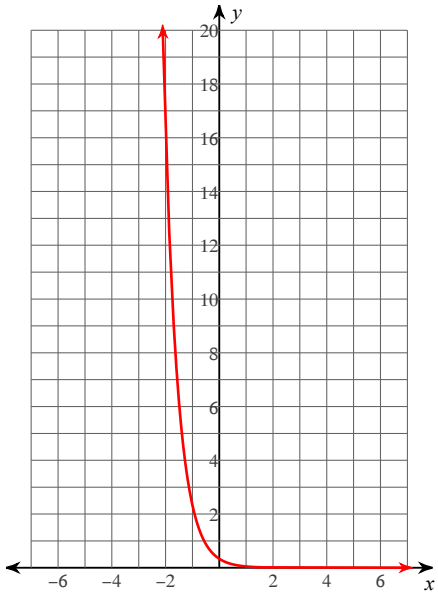
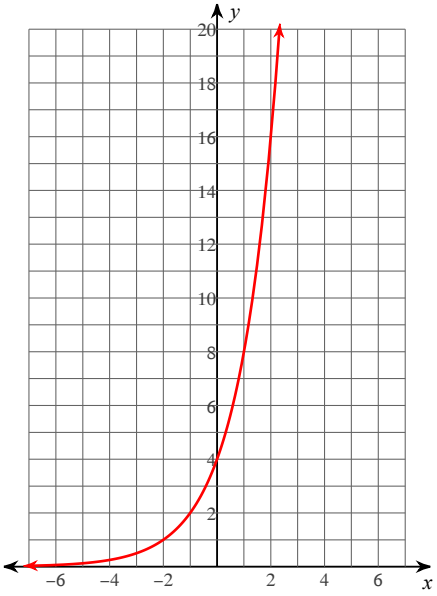


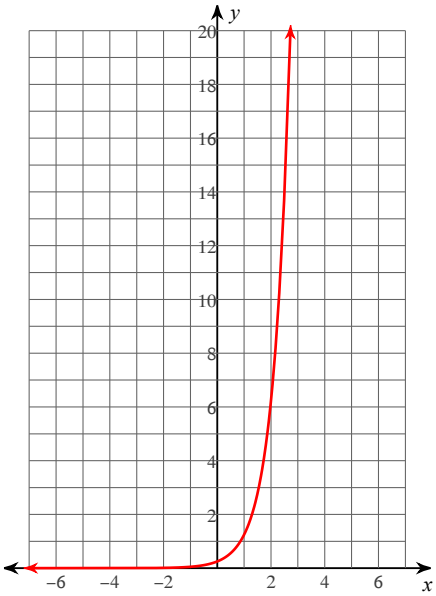
36) $y = \frac{1}{3} \cdot \left(\frac{1}{7}\right)^x$



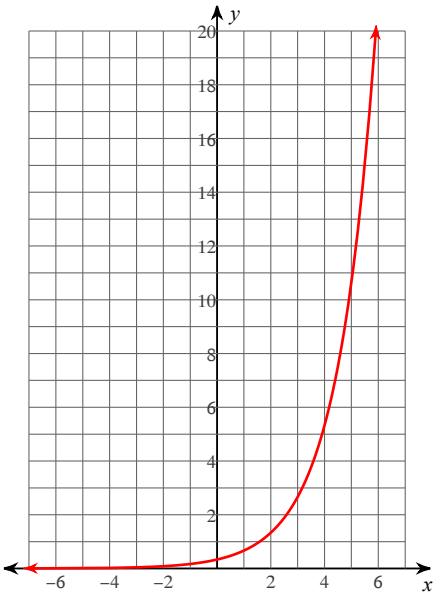
37) $y = 4 \cdot 2^x$



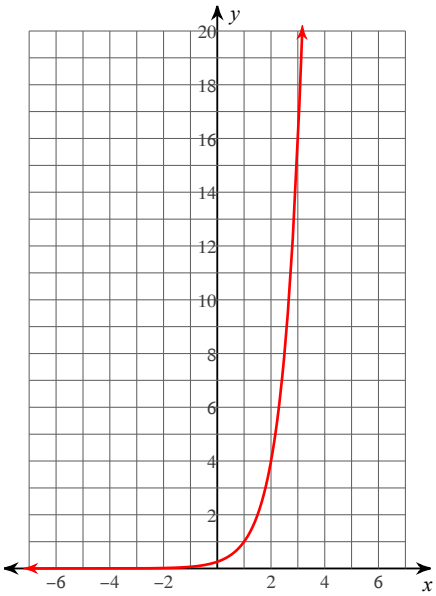
38) $y = \frac{1}{4} \cdot 5^x$



39) $y = \frac{1}{3} \cdot 2^x$



40) $y = \frac{1}{4} \cdot 4^x$



41) Trevon invests $3,485 in a savings account with a fixed annual interest rate of 8% compounded continuously. What will the account balance be after 6 years?

$5,632.02

42) Kristin invests $5,123 in a savings account with a fixed annual interest rate of 9% compounded continuously. What will the account balance be after 6 years?

$8,791.10

43) Ming invests $8,615 in a savings account with a fixed annual interest rate of 2% compounded continuously. What will the account balance be after 11 years?

$10,734.95

44) Shanice invests $8,369 in a retirement account with a fixed annual interest rate of 5% compounded continuously. What will the account balance be after 18 years?

$20,584.42

45) Mike invests $4,938 in a savings account with a fixed annual interest rate of 4% compounded continuously. What will the account balance be after 10 years?

$7,366.63

46) Matt invests $1,426 in a retirement account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 20 years?

$4,734.49

47) Perry invests $4,314 in a retirement account with a fixed annual interest rate of 7% compounded continuously. What will the account balance be after 14 years?

$11,494.46

48) Ndiba invests $5,851 in a retirement account with a fixed annual interest rate of 7% compounded continuously. What will the account balance be after 17 years?

$19,232.71

49) Julio invests $4,967 in a savings account with a fixed annual interest rate of 9% compounded continuously. What will the account balance be after 8 years?

$10,204.37

50) Stephanie invests $5,076 in a retirement account with a fixed annual interest rate of 5% compounded continuously. What will the account balance be after 19 years?

$13,125.06

51) Pranav invests $4,590 in a savings account with a fixed annual interest rate of 8% compounded continuously. What will the account balance be after 8 years?

$8,704.85

52) Jose invests $7,760 in a retirement account with a fixed annual interest rate of 3% compounded continuously. What will the account balance be after 17 years?

$12,922.66

53) Darryl invests $7,701 in a retirement account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 15 years?

$18,941.40

54) Jimmy invests $3,011 in a retirement account with a fixed annual interest rate of 8% compounded continuously. What will the account balance be after 14 years?

$9,228.28

55) Emily invests $3,782 in a retirement account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 16 years?

$9,877.44

56) Eduardo invests $8,892 in a savings account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 9 years?

$15,258.73

57) Ndiba invests $6,390 in a savings account with a fixed annual interest rate of 7% compounded continuously. What will the account balance be after 10 years?

$12,867.88

58) Emily invests $4,162 in a savings account with a fixed annual interest rate of 6% compounded continuously. What will the account balance be after 7 years?

$6,334.40

59) Julio invests $1,319 in a retirement account with a fixed annual interest rate of 7% compounded continuously. What will the account balance be after 13 years?

$3,276.82

60) Sumalee invests $6,237 in a savings account with a fixed annual interest rate of 8% compounded continuously. What will the account balance be after 4 years?

$8,589.15

Rewrite each equation in exponential form.

61) $\log_{17} 289 = 2$

$17^2 = 289$

62) $\log_{11} 121 = 2$

$11^2 = 121$

63) $\log_{\frac{1}{15}} \frac{1}{225} = 2$ $\left(\frac{1}{15}\right)^2 = \frac{1}{225}$

64) $\log_{361} 19 = \frac{1}{2}$ $361^{\frac{1}{2}} = 19$

65) $\log_8 64 = 2$
$8^2 = 64$

66) $\log_9 3 = \frac{1}{2}$ $9^{\frac{1}{2}} = 3$

67) $\log_4 16 = 2$
$4^2 = 16$

68) $\log_{13} \frac{1}{169} = -2$ $13^{-2} = \frac{1}{169}$

69) $\log_{289} 17 = \frac{1}{2}$ $289^{\frac{1}{2}} = 17$

70) $\log_{15} 225 = 2$
$15^2 = 225$

71) $\log_{18} 324 = 2$
$18^2 = 324$

72) $\log_9 81 = 2$
$9^2 = 81$

73) $\log_{\frac{1}{5}} \frac{1}{25} = 2$ $\left(\frac{1}{5}\right)^2 = \frac{1}{25}$

74) $\log_{15} \frac{1}{225} = -2$ $15^{-2} = \frac{1}{225}$

75) $\log_{12} 144 = 2$
$12^2 = 144$

76) $\log_5 125 = 3$
$5^3 = 125$

77) $\log_{13} 1 = 0$
$13^0 = 1$

78) $\log_{\frac{1}{5}} \frac{1}{625} = 4$ $\left(\frac{1}{5}\right)^4 = \frac{1}{625}$

79) $\log_{125} 25 = \frac{2}{3}$ $125^{\frac{2}{3}} = 25$

80) $\log_8 8 = 1$
$8^1 = 8$

Rewrite each equation in logarithmic form.

81) $20^2 = 400$
$\log_{20} 400 = 2$

82) $\left(\frac{1}{18}\right)^2 = \frac{1}{324}$ $\log_{\frac{1}{18}} \frac{1}{324} = 2$

83) $5^3 = 125$
$\log_5 125 = 3$

84) $16^{\frac{1}{2}} = 4$ $\log_{16} 4 = \frac{1}{2}$

85) $12^1 = 12$
$\log_{12} 12 = 1$

86) $9^{\frac{1}{2}} = 3$ $\log_9 3 = \frac{1}{2}$

87) $18^2 = 324$
$\log_{18} 324 = 2$

88) $2^3 = 8$
$\log_2 8 = 3$

89) $\left(\frac{1}{12}\right)^2 = \frac{1}{144}$ $\log_{\frac{1}{12}} \frac{1}{144} = 2$

90) $15^2 = 225$
$\log_{15} 225 = 2$

91) $289^{\frac{1}{2}} = 17$ $\log_{289} 17 = \frac{1}{2}$

92) $15^1 = 15$
$\log_{15} 15 = 1$

93) $13^0 = 1$
$\log_{13} 1 = 0$

94) $14^2 = 196$
$\log_{14} 196 = 2$

95) $3^3 = 27$
$\log_3 27 = 3$

96) $9^2 = 81$
$\log_9 81 = 2$

97) $19^2 = 361$
$\log_{19} 361 = 2$

98) $2^4 = 16$
$\log_2 16 = 4$

99) $13^2 = 169$
$\log_{13} 169 = 2$

100) $8^2 = 64$
$\log_8 64 = 2$